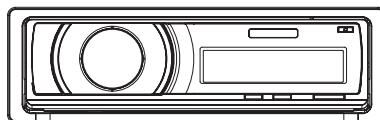


Service Manual



DEH-4090MP/XN/ID

ORDER NO.
CRT4033

CD RECEIVER

DEH-4090MP /XN/ID

DEH-6010MP /XN/UR

This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech.Module	Remarks
CX-3195	CRT3815	S10.5COMP2	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly



For details, refer to "Important Check Points for Good Servicing".

SAFETY INFORMATION

CAUTION

A

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfe. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

■

●

Safety Precautions for those who Service this Unit.
When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

B

Caution:

1. During repair or tests, minimum distance of 13 cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.

■

C

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D

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E

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F

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SERVICE PRECAUTIONS

1.1 SERVICE PRECAUTIONS



1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
3. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY".
4. After replacing the pickup unit, be sure to check the grating.
5. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.
6. Sheet (Mechanism cover), CNM9404 can not be reused if you remove it.

1.2 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C.
Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
GYP1006 1.0 in dia.
GYP1007 0.6 in dia.
GYP1008 0.3 in dia.

2. SPECIFICATIONS

2.1 SPECIFICATIONS

● DEH-4090MP/XN/ID

General

Rated power source 14.4 V DC
(allowable voltage range:
12.0 V to 14.4 V DC)

Grounding system Negative type

Max. current consumption
..... 10.0 A

Backup current 5 mA or less

Dimensions (W × H × D):

DIN

Chassis 178 mm × 50 mm × 162
mm

Nose 188 mm × 58 mm × 14 mm

D

Chassis 178 mm × 50 mm × 162
mm

Nose 170 mm × 46 mm × 14 mm

Weight 1.5 kg

Audio

Maximum power output 50 W × 4
50 W × 2/4 Ω + 70 W × 1/2
Ω (for subwoofer)

Continuous power output ... 22 W × 4 (50 Hz to 15 000
Hz, 5% THD, 4 Ω load, both
channels driven)

Load impedance 4 Ω to 8 Ω × 4
4 Ω to 8 Ω × 2 + 2 Ω × 1

Preout max output level 2.2 V

Equalizer (3-Band Parametric Equalizer):

Low

Frequency 40/80/100/160 Hz

Q Factor 0.35/0.59/0.95/1.15 (+6 dB
when boosted)

Gain ±12 dB

Mid

Frequency 200/500/1k/2k Hz

Q Factor 0.35/0.59/0.95/1.15 (+6 dB
when boosted)

Gain ±12 dB

High

Frequency 3.15k/8k/10k/12.5k Hz

Q Factor 0.35/0.59/0.95/1.15 (+6 dB
when boosted)

Gain ±12 dB

Loudness contour:

Low +3.5 dB (100 Hz), +3 dB (10
kHz)

Mid +10 dB (100 Hz), +6.5 dB
(10 kHz)

High +11 dB (100 Hz), +11 dB
(10 kHz)

(volume: -30 dB)

HPF:

Frequency 50/63/80/100/125 Hz

Slope -12 dB/oct

Subwoofer (mono):

Frequency 50/63/80/100/125 Hz

Slope -18 dB/oct

Gain +6 dB to -24 dB

Phase Normal/Reverse

Bass boost:

Gain +12 dB to 0 dB

CD player

System Compact disc audio system

Usable discs Compact disc

Signal-to-noise ratio 94 dB (1 kHz) (IEC-A net-
work)

Number of channels 2 (stereo)

MP3 decoding format MPEG-1 & 2 Audio Layer 3

WMA decoding format Ver. 7, 7.1, 8, 9, 10, 11 (2ch
audio)

(Windows Media Player)

WAV signal format Linear PCM & MS ADPCM
(Non-compressed)

FM tuner

Frequency range 87.5 MHz to 108.0 MHz

Usable sensitivity 8 dBf (0.7 μV/75 Ω, mono,
S/N: 30 dB)

Signal-to-noise ratio 75 dB (IEC-A network)

AM tuner

Frequency range 531 kHz to 1 602 kHz (9 kHz)
530 kHz to 1 640 kHz (10
kHz)

Usable sensitivity 18 μV (S/N: 20 dB)

Signal-to-noise ratio 65 dB (IEC-A network)



Note

Specifications and the design are subject to mod-
ifications without notice due to improvements. □

● DEH-6010MP/XN/UR

General

Rated power source	14.4 V DC (allowable voltage range: 10.8 V to 15.1 V DC)
Grounding system	Negative type
Max. current consumption	10.0 A
Backup current	5 mA or less
Dimensions (W × H × D): DIN	
Chassis	178 mm × 50 mm × 162 mm
Nose	188 mm × 58 mm × 14 mm
D	
Chassis	178 mm × 50 mm × 162 mm
Nose	170 mm × 46 mm × 14 mm
Weight	1.5 kg

Audio

Maximum power output	50 W × 4 50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
Continuous power output ...	22 W × 4 (50 Hz to 15 000 Hz, 5% THD, 4 Ω load, both channels driven)
Load impedance	4 Ω to 8 Ω × 4 4 Ω to 8 Ω × 2 + 2 Ω × 1
Preout max output level	2.2 V
Equalizer (3-Band Parametric Equalizer):	
Low	
Frequency	40/80/100/160 Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	±12 dB
Mid	
Frequency	200/500/1k/2k Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	±12 dB
High	
Frequency	3.15k/8k/10k/12.5k Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	±12 dB
Loudness contour:	
Low	+3.5 dB (100 Hz), +3 dB (10 kHz)
Mid	+10 dB (100 Hz), +6.5 dB (10 kHz)
High	+11 dB (100 Hz), +11 dB (10 kHz) (volume: -30 dB)

HPF:

Frequency	50/63/80/100/125 Hz
Slope	-12 dB/oct

Subwoofer (mono):

Frequency	50/63/80/100/125 Hz
Slope	-18 dB/oct
Gain	+6 dB to -24 dB
Phase	Normal/Reverse

Bass boost:

Gain	+12 dB to 0 dB
------------	----------------

CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal-to-noise ratio	94 dB (1 kHz) (IEC-A network)
Number of channels	2 (stereo)
MP3 decoding format	MPEG-1 & 2 Audio Layer 3
WMA decoding format	Ver. 7, 7.1, 8, 9, 10, 11 (2ch audio) (Windows Media Player)
WAV signal format	Linear PCM & MS ADPCM (Non-compressed)

FM tuner

Frequency range	87.5 MHz to 108.0 MHz
Usable sensitivity	8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
Signal-to-noise ratio	75 dB (IEC-A network)

AM tuner

Frequency range	531 kHz to 1 602 kHz (9 kHz) 530 kHz to 1 640 kHz (10 kHz)
Usable sensitivity	18 μV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)



Note

Specifications and the design are subject to modifications without notice due to improvements. ■

2.2 DISC/CONTENT FORMAT

A



B

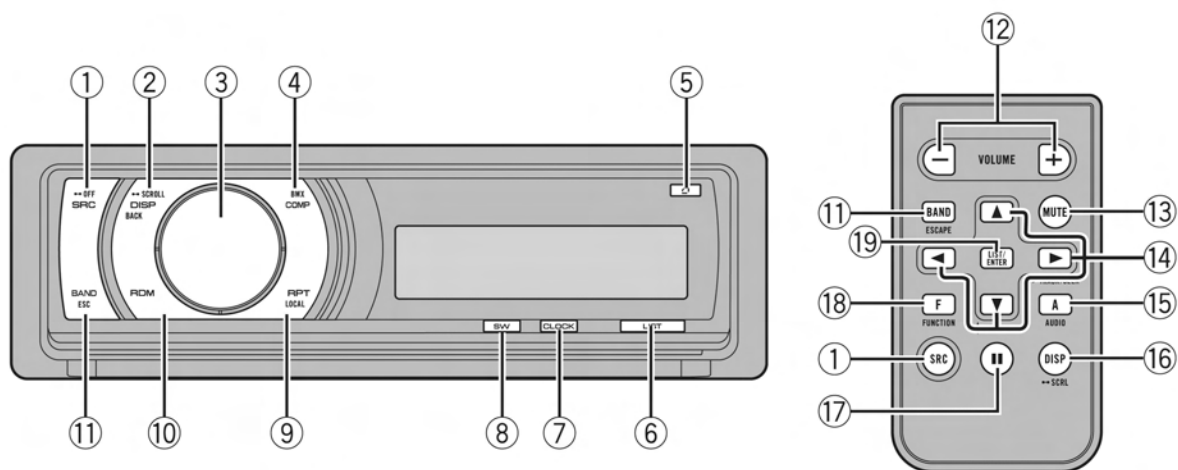
C

D

E

F

2.3 PANEL FACILITIES



What's What

Head unit

① SRC/OFF button

This unit is turned on by selecting a source. Press to cycle through all the available sources.

② DISP/BACK/SCROLL button

Press to select different displays. Press and hold to scroll the text information. Press to return to the previous display when operating the menu. Press and hold to return to the main menu when operating the menu.

③ MULTI-CONTROL

Move to perform manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions. Turn to increase or decrease the volume.

④ COMP/BMX button

Press to turn COMP (compression) and BMX function on or off.

⑤ OPEN button

Press to open the front panel.

⑥ LIST button

Press to display the track title list, folder list, file list or preset channel list depending on the source.

⑦ CLOCK button

Press to change to the clock display.

⑧ SW/BASS button

Press to switch to subwoofer setting menu. When operating subwoofer menu, press to switch setting. Press and hold to switch to bass boost menu. When operating bass booster, this button cannot be operated.

⑨ RPT/LOCAL button

Press to switch the repeat play range. Press to turn local function on or off while using tuner as the source.

⑩ RDM button

Press to turn random function on or off.

⑪ BAND/ESC button

Press to select among three FM bands and one AM band. Press to return to the ordinary display when operating menu.

Remote control

Operation is the same as when using the buttons on the head unit.

⑫ **VOLUME buttons**

Press to increase or decrease the volume.

⑬ **MUTE button**

Press to turn off the sound. To turn on the sound, press again.

⑭ **▲/▼/◀/▶ buttons**

Press to perform manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions.

⑮ **AUDIO button**

Press to select an audio function.

⑯ **DISP button**

Press to select different displays.
Press and hold to scroll the text information.

⑰ **⏸ (pause) button**

Press to turn pause on or off.

⑱ **FUNCTION button**

Press to select functions.

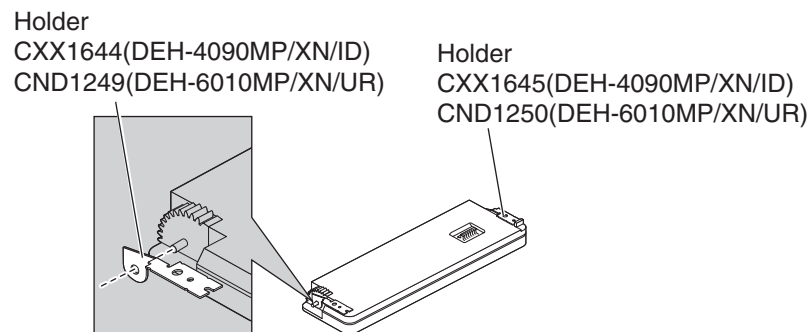
⑲ **LIST/ENTER button**

Press to display the track title list, folder list, file list or preset channel list depending on the source.
While in the operating menu, press to control functions.

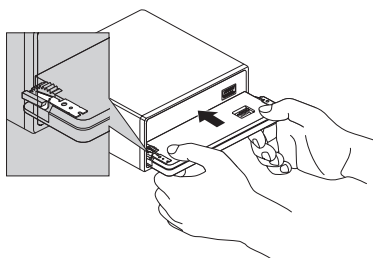
Fixing the front panel

If you do not operate the removing and attaching the front panel function, use the supplied fixing screws and holders to fix the front panel to this unit.

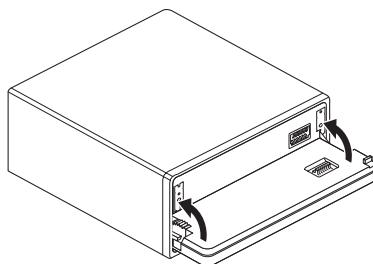
1. Attach the holders to both sides of the front panel.



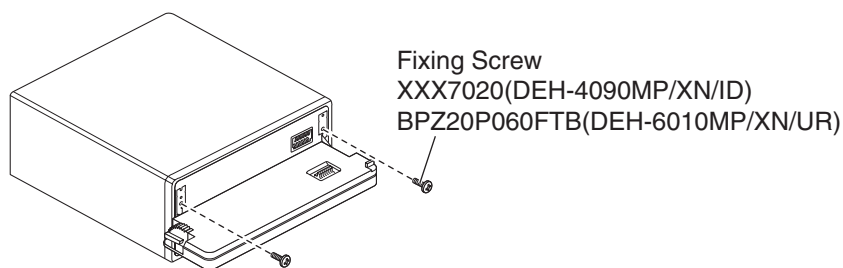
2. Replace the front panel to the unit.



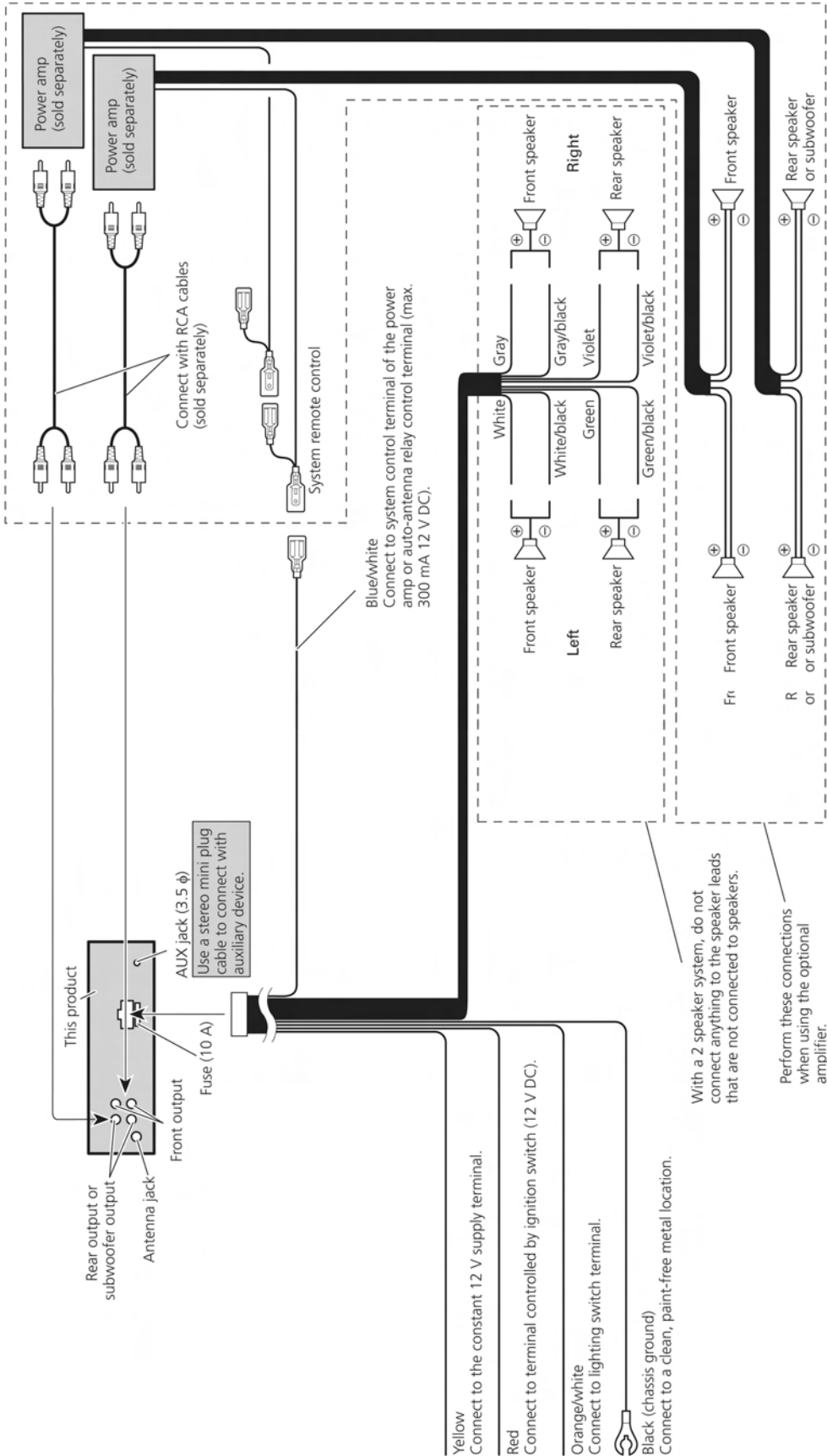
3. Flip the holders into upright positions.



4. Fix the front panel to the unit using fixing screws.



2.4 CONNECTION DIAGRAM



3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

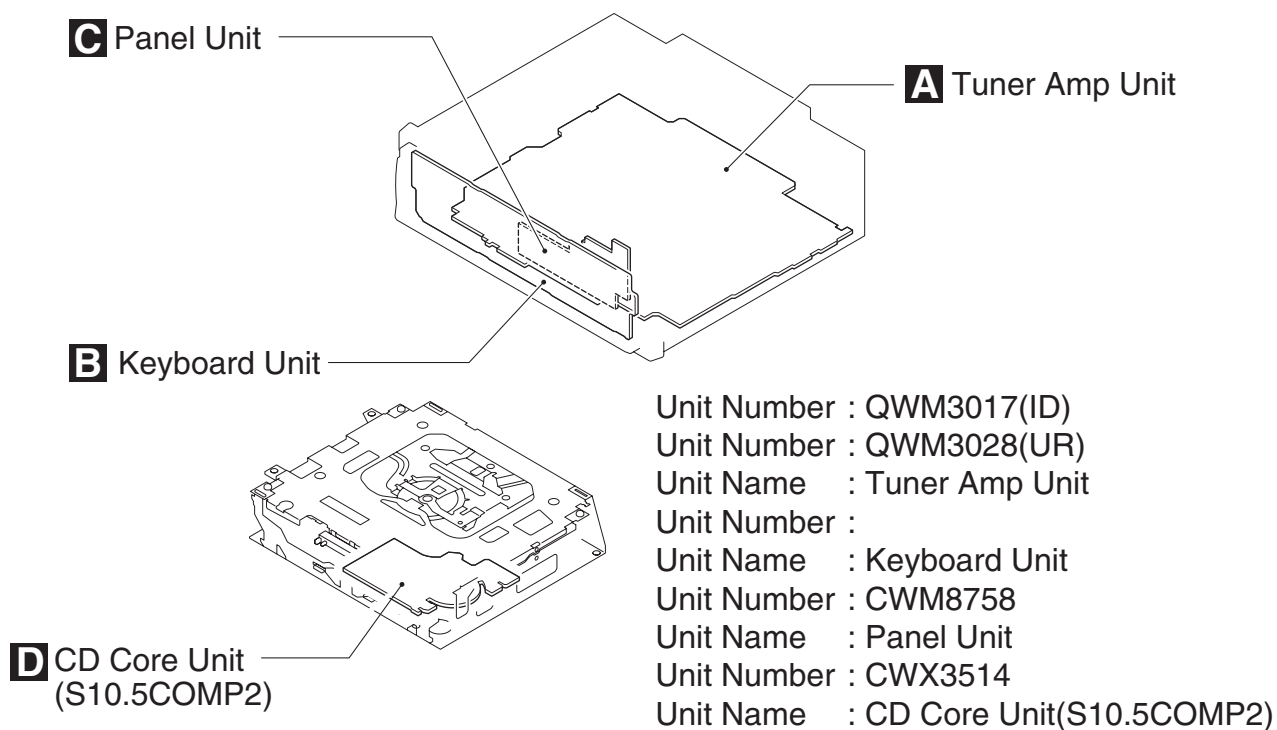
To keep the product quality after servicing, please confirm following check points.

No.		Procedures	Item to be confirmed
1		Confirm whether the customer complain has been solved. If the customer complain occurs with the specific media, use it for the operation check.	The customer complain must not be reappeared. Display, audio and operations must be normal.
2	CD	Play back a CD. (Track search)	No malfunction on display, audio and operation.
3	FM/AM tuner	Check FM/AM tuner action. (Seek, Preset) Switch band to check both FM and AM.	Display, audio and operations must be normal.
4		Check whether no disc is inside the product.	The media used for the operating check must be ejected.
5		Appearance check	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding audio:

Item to be checked regarding audio
Distortion
Noise
Volume too low
Volume too high
Volume fluctuating
Sound interrupted

3.2 PCB LOCATIONS



3.3 JIGS LIST

A

● Jigs List

Name	Jig No.	Remarks
Test Disc	TCD-782	Checking the grating
L.P.F.		Checking the grating (Two pieces)

B

● Grease List

Name	Grease No.	Remarks
Grease	GEM1024	CD Mechanism Module
Grease	GEM1045	CD Mechanism Module



C

Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

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7

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A

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B

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C

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D

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E

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F

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5

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6

DEH-4090MP/XN/ID

■

7

■

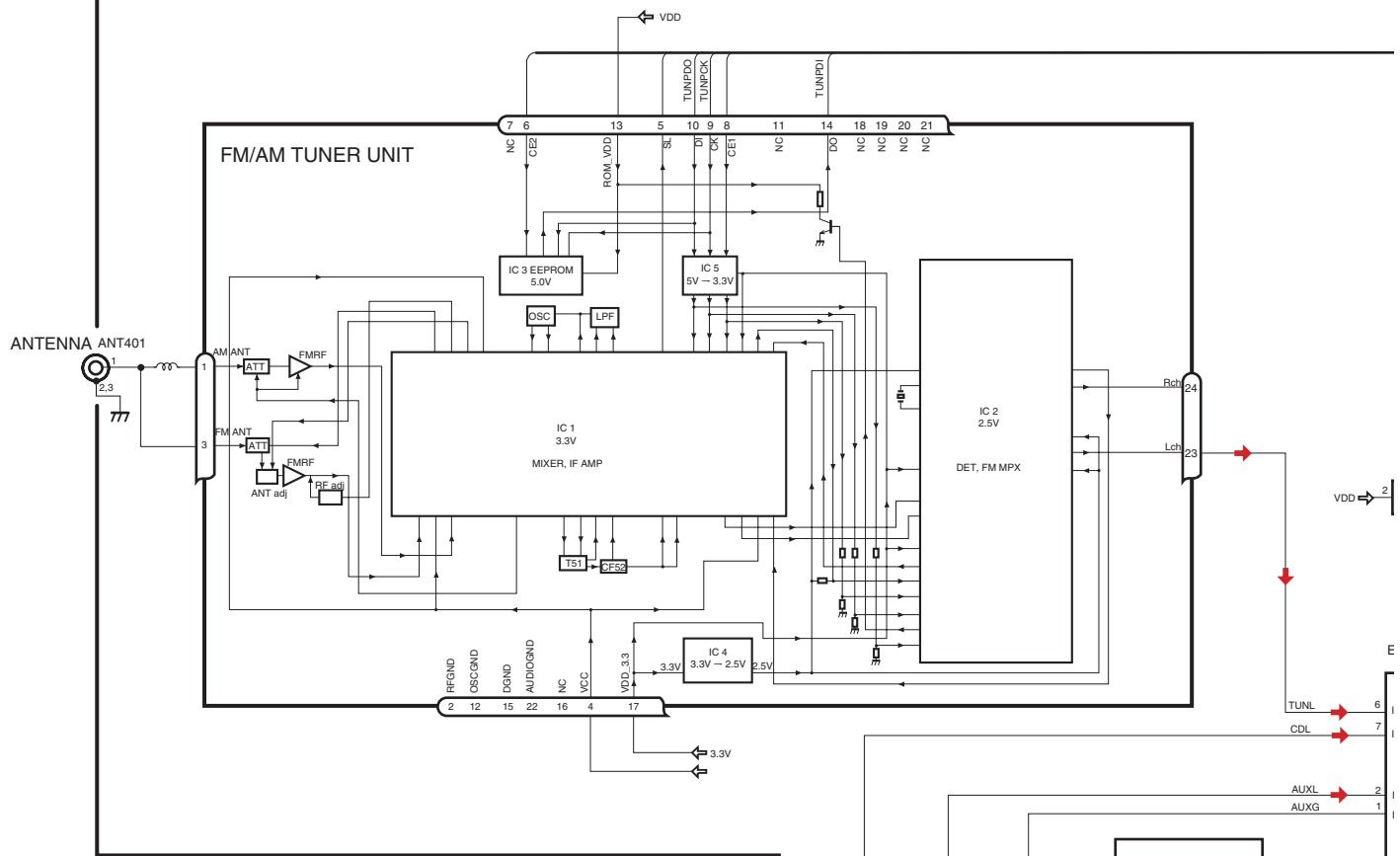
8

15

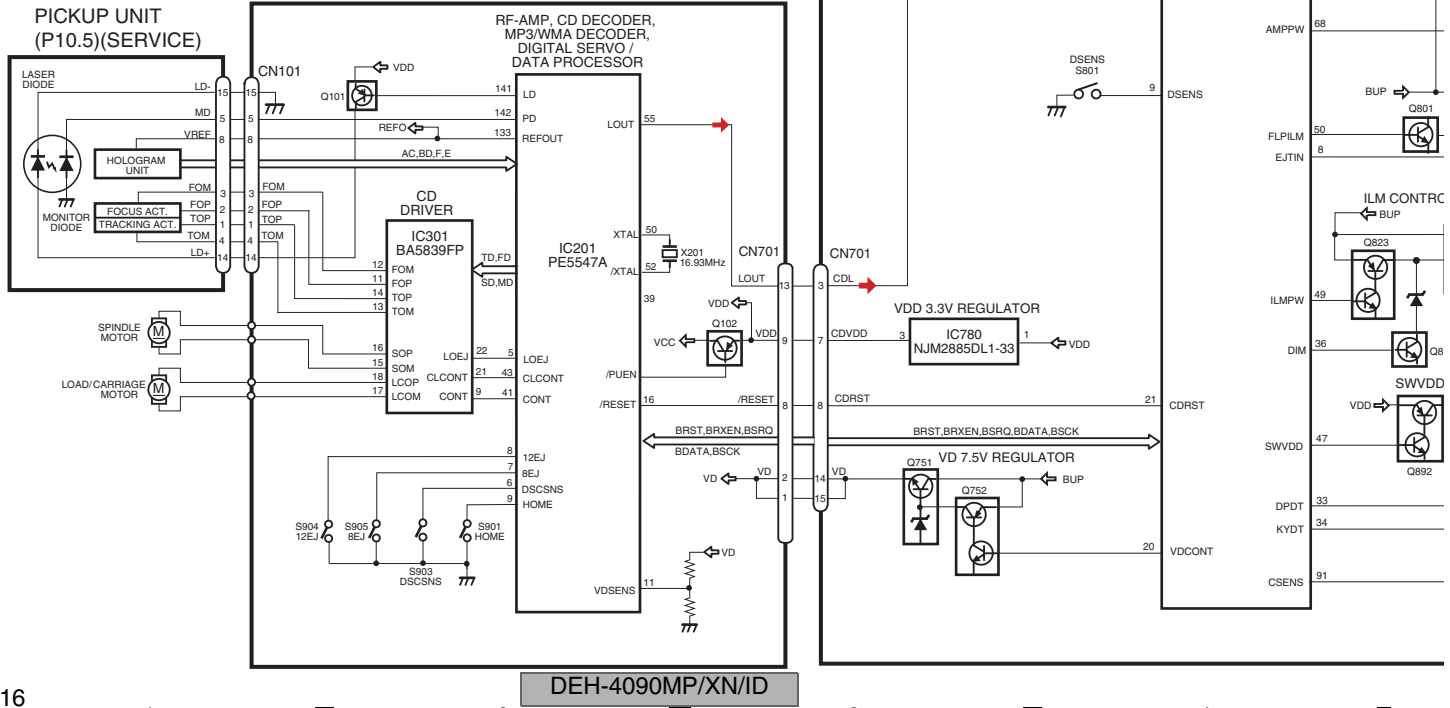
■

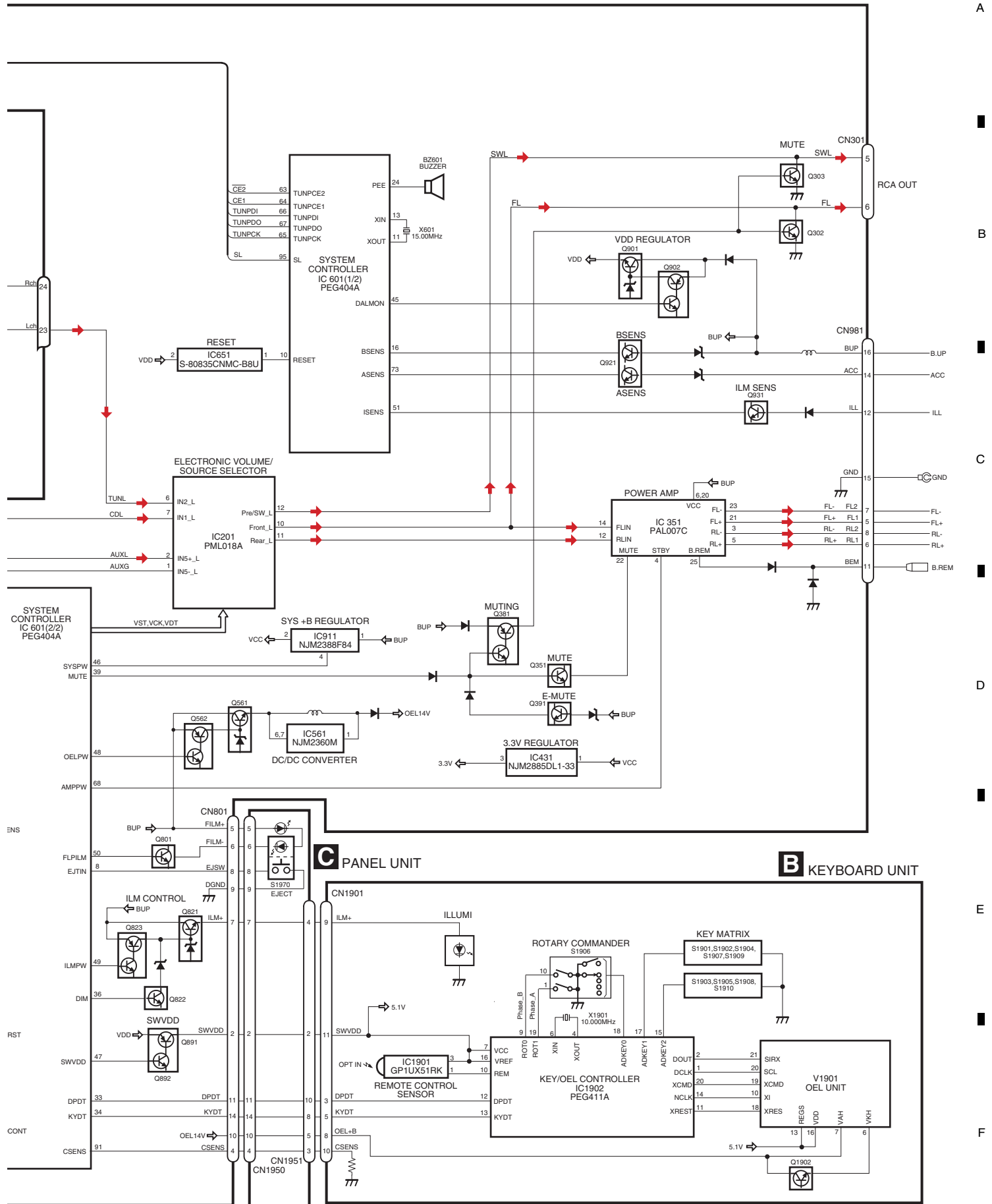
4. BLOCK DIAGRAM

A TUNER AMP UNIT

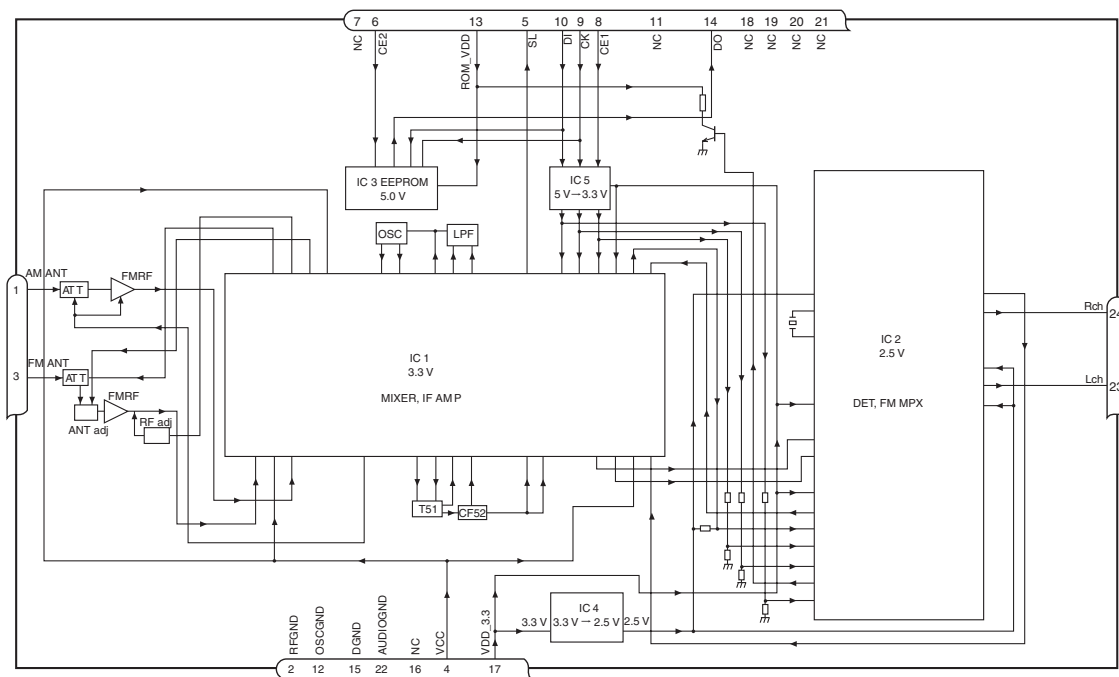


CD CORE UNIT(S10.5COMP2)





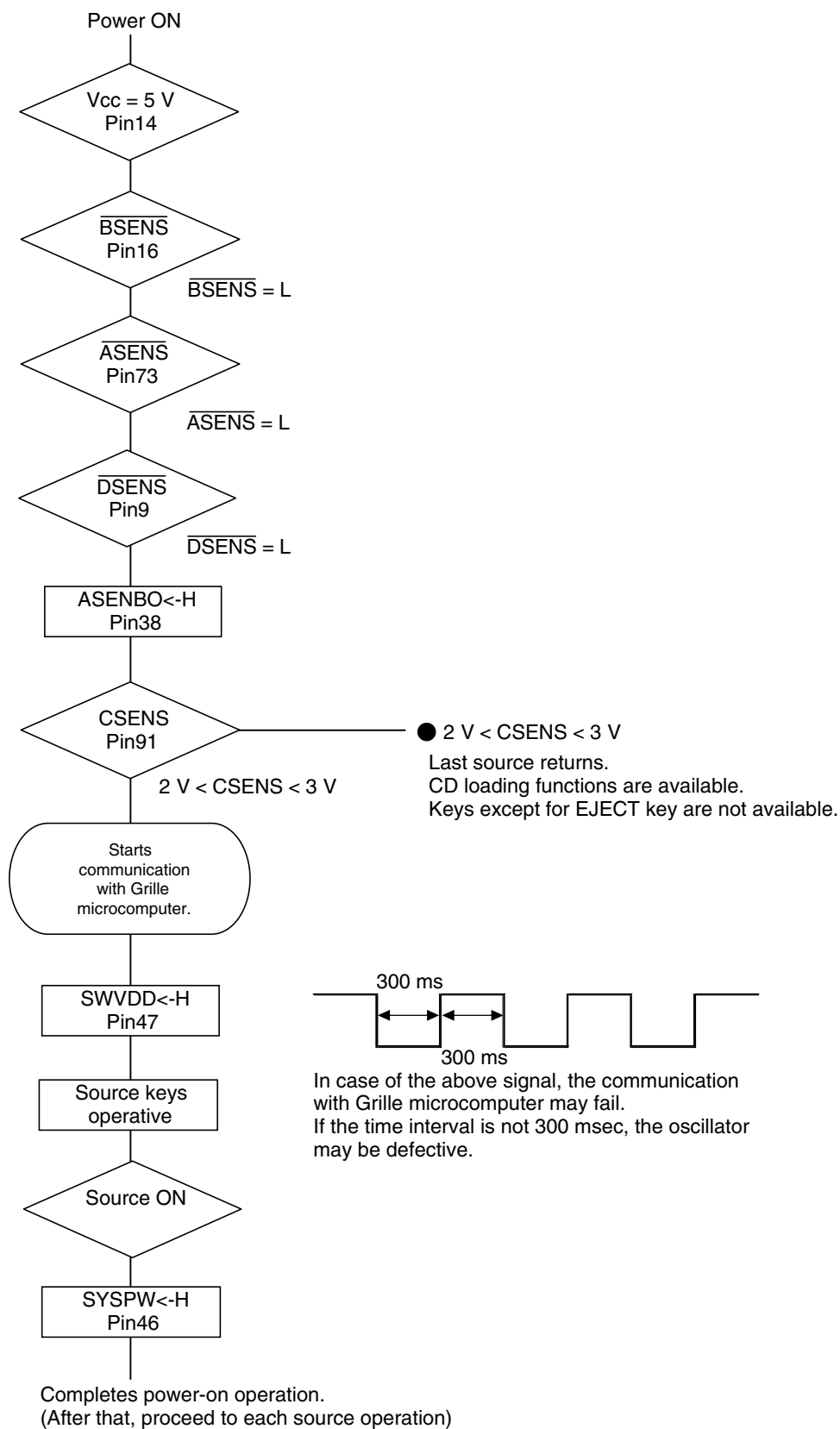
FM/AM Tuner Unit



No.	Symbol	I/O	Explain
1	AMANT	I	AM antenna input
2	RFGND		RF ground
3	FMANT	I	FM antenna input
4	VCC		power supply
5	SL	O	signal level
6	CE2	I	chip enable-2
7	NC		non connection
8	CE1	I	chip enable-1
9	CK	I	clock
10	DI	I	data in
11	NC		non connection
12	OSCGND		osc ground
13	ROM_VDD		power supply
14	DO	O	data out
15	DGND		digital ground
16	NC		non connection
17	VDD_3.3		power supply
18	NC		non connection
19	NC		non connection
20	NC		non connection
21	NC		non connection
22	AUDIOGND		audio ground
23	L ch	O	L channel output
24	R ch	O	R channel output

5. DIAGNOSIS

5.1 OPERATIONAL FLOWCHART



5.2 ERROR CODE LIST

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR-xx	ERR-xx	E-xx

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Com- munication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

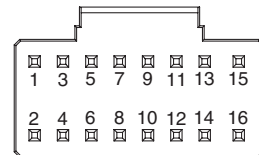
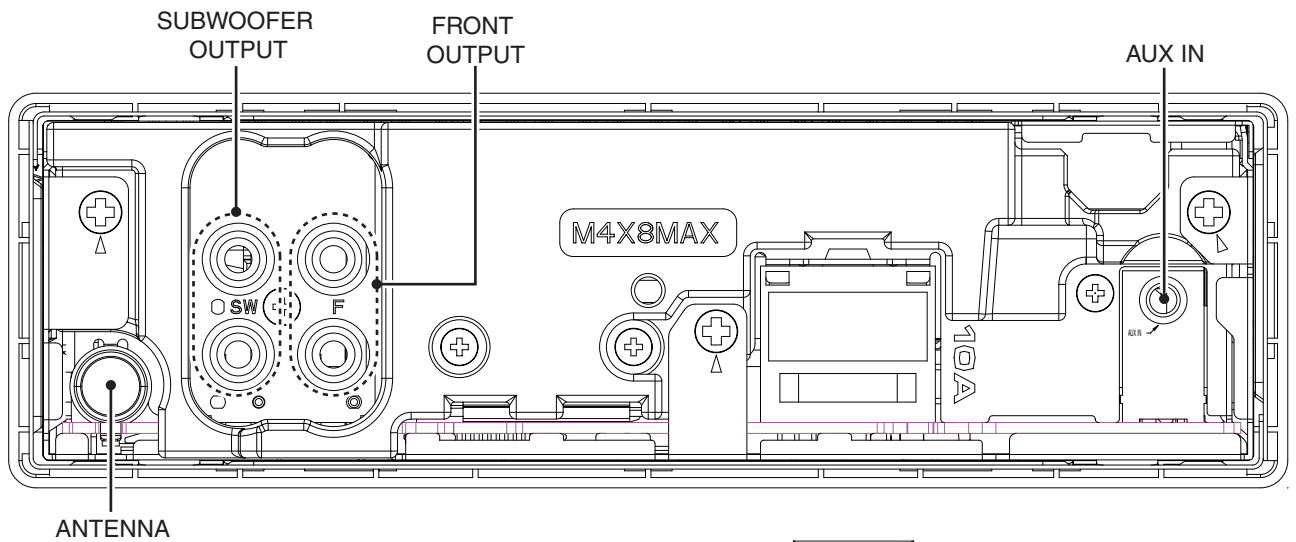
Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

5.3 CONNECTOR FUNCTION DESCRIPTION



1 FR+	9 MUTE
2 RR+	10 NC
3 FR-	11 B.REM
4 RR-	12 ILM
5 FL+	13 NC
6 RL+	14 ACC
7 FL-	15 GND
8 RL-	16 B.UP

6. SERVICE MODE

6.1 CD TEST MODE

During pressing the "SOURCE" and "RPT" keys simultaneously, perform the reset-start, then turn ON the CD to enter the CDS test mode.

How to issue the 1 - 6 keys in the 08 model's slave test:

The specification of the 08 model does not include the 1 - 6 keys issuance function for H/U and the remote control unit. Therefore, in order to issue commands in a slave test, use the direct FUNCTION keys alternatively to enable the equal key command sending function to the existing models.

Outline) Use the direct FUNCTION keys to display, select, or issue the KEY 1 - 6.

<Direct FUNCTION keys and corresponding functions>

Direct FUNCTION key	Normal mode	Slave test mode
A	COMP	Selecting a key command
B	RDM	Issuing a key command
C	RPT	Switching a screen

For convenience, a name of each direct FUNCTION key is shown as "A", "B", and "C".

How to issue the 1 - 6 keys for the CDS source:

(The areas below are overwritten and displayed on character strings for the normal mode display.)

① During the slave test mode, the key name "K1" is shown at the left by default.

In this condition, press the A key to toggle K1 - K6, and select a command to be sent to the slave.

C	O	M	P	A	C	T		D	I	S	C				
K	1			!		T	-	!	!			!	!	!	!
FOLDER				TRK				MINUTE				SECOND			

The one-line model shows only the bottom column.



C	O	M	P	A	C	T		D	I	S	C				
K	6			!		T	-	!	!			!	!	!	!

② During the K1 - K6 key names are displayed, press the B key and issue the selected command.

C	O	M	P	A	C	T		D	I	S	C				
K	1			!		T	-	!	!			!	!	!	!



Send a key command selected by pressing the KEY 1.

③ Press the C key to change display/non-display of key names.

When the non-display mode is selected for the K1 - K6 key names, "A key" and "B key" are invalid.

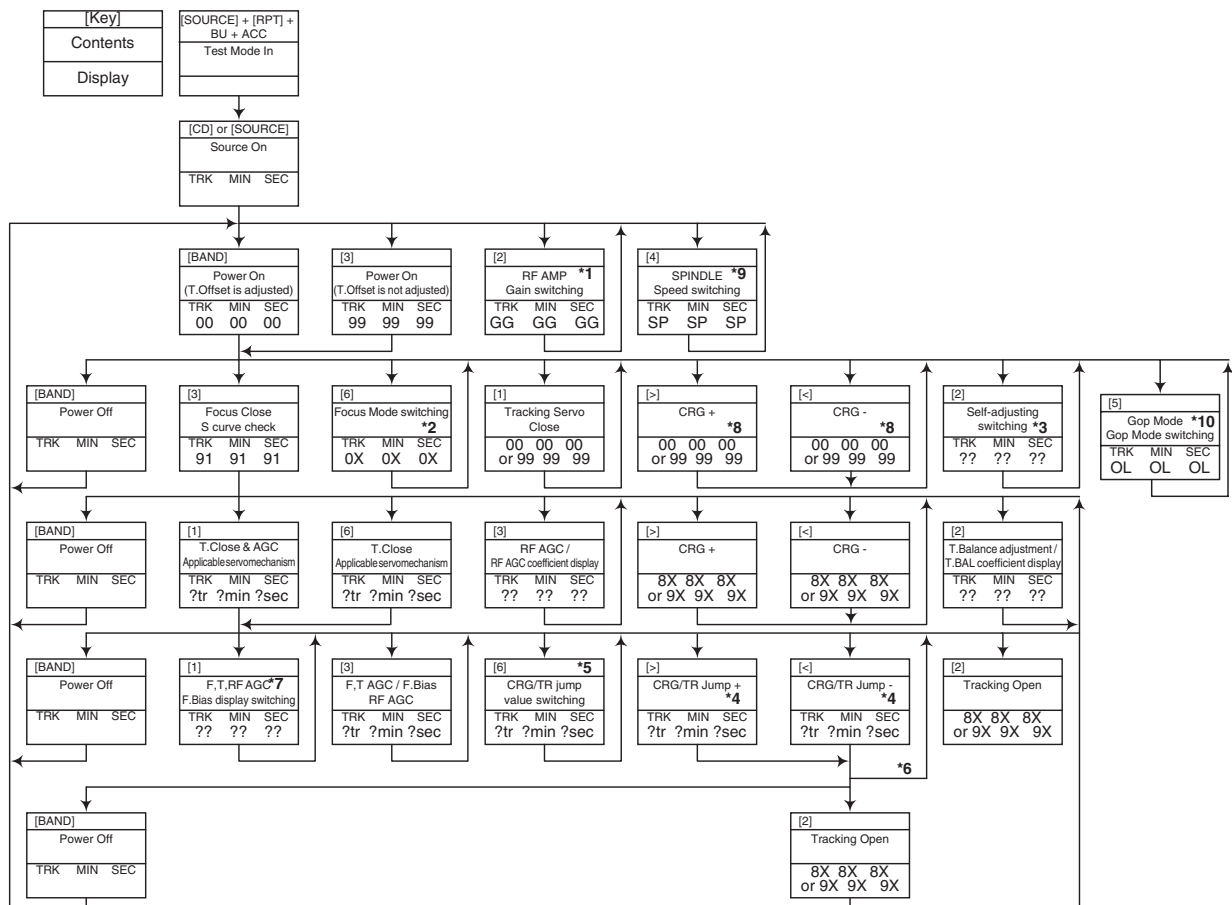
C	O	M	P	A	C	T		D	I	S	C				
K	1			!		T	-	!	!			!	!	!	!



C	O	M	P	A	C	T		D	I	S	C				
F	-	!	!		T	-	!	!				!	!	!	!

Pressing the A key or B key does not work.

Flow Chart



*1) TYP → + 6 dB → + 12 dB
 TRK MIN SEC → TRK₀₆MIN₀₆SEC₀₆ → TRK₁₂MIN₁₂SEC₁₂

*2) Focus Close → S Curve check setting → F EQ measurement setting
 TRK₀₀MIN₀₀SEC₀₀ → TRK₀₁MIN₀₁SEC₀₁ → TRK₀₂MIN₀₂SEC₀₂
 (TRK₉₉MIN₉₉SEC₉₉)

*3) F.Offset Display → RF.Offset → T.Offset Display → Switch to the order of the original display

*4) 1TR/4TR/10TR/32TR/100TR

*5) Single → 4TR → 10TR → 32TR → 100TR → CRG Move
 9x(8x):91(81) 92(82) 93(83) 94(84) 95(85) 96(86)

*6) Only at the time of CRG move, 100TR jump

*7) TRK/MIN/SEC → F.AGC → T.AGC Gain → F.Bias → RF AGC

*8) CRG motor voltage = 2 [V]

*9) TYP (1X) → 2X → 1X
 TRK MIN SEC → TRK₂₂MIN₂₂SEC₂₂ → TRK₁₁MIN₁₁SEC₁₁

*10) OFF(TYP) → FORCUS → TRACKING
 TRK MIN SEC → TRK₇₀MIN₇₀SEC₇₀ → TRK₇₁MIN₇₁SEC₇₁

• As for the double speed (2x), audio output cannot be supported

- *1) After the [Eject] key is pressed keys other than the [Eject] key should not be pressed, until disc ejection is complete.
- When the key [2] or [3] is pressed during the Focus Search, the power supply should be immediately turned off (otherwise the lens sticks to Wall, causing the actuator to be damaged).
- In the case of TR jump other than to 100TR, the function shall continue to be processed even if the TR jump key is released. As for the CRG Move and 100TR Jump, the mechanism shall be set to the Tracking Close mode when the key is released.
- When the power is turned on/off the jump mode is reset to the Single TR (91) while the gain of the RFAMP is reset to 0 dB. At the same time all the self-adjusting values shall return to the default setting.

7. DISASSEMBLY

***NOTE)** While the photograph shown is slightly different from this model in shape, the disassembly procedure is the same.

● Removing the Keyboard Unit (Fig.1,2,3)

Pull arrow direction and remove Detach Grille Assy.(Fig.1)

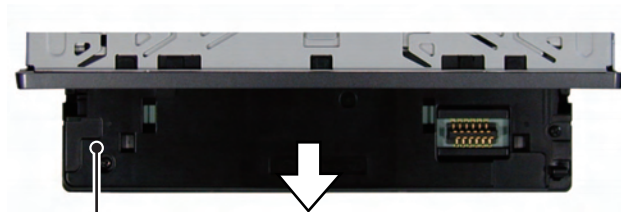


Fig.1

Remove the Knob Unit.(Fig.2)

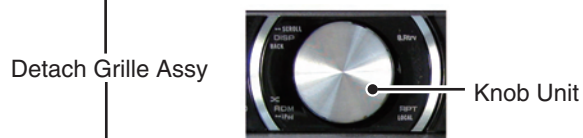


Fig.2

1 Remove the four screws.(Fig.3)

Remove the Cover and then remove the Keyboard Unit.

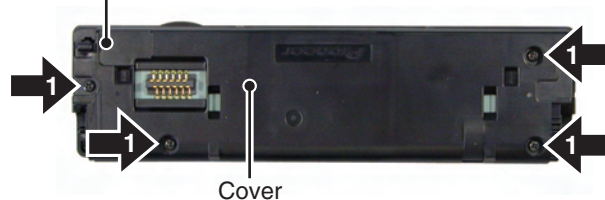


Fig.3

● Removing the Holder (Fig.4)

Take off the pick of left and right and then a holder slide to the arrow course.

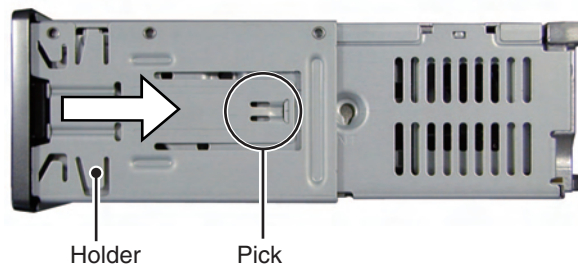


Fig.4

● Removing the Case and Panel (Fig.5)

Remove the Case and Panel.

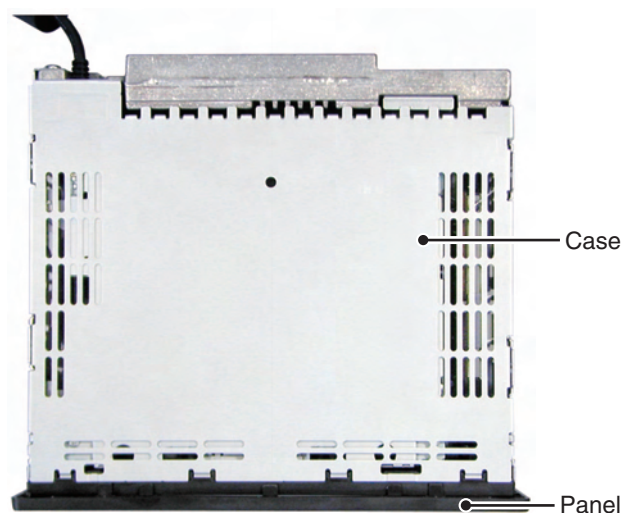


Fig.5

● Removing the CD Mechanism Module (Fig.6)

- ➡ 1 Remove the four screws.

Disconnect the cable
and then remove the CD Mechanism Module.

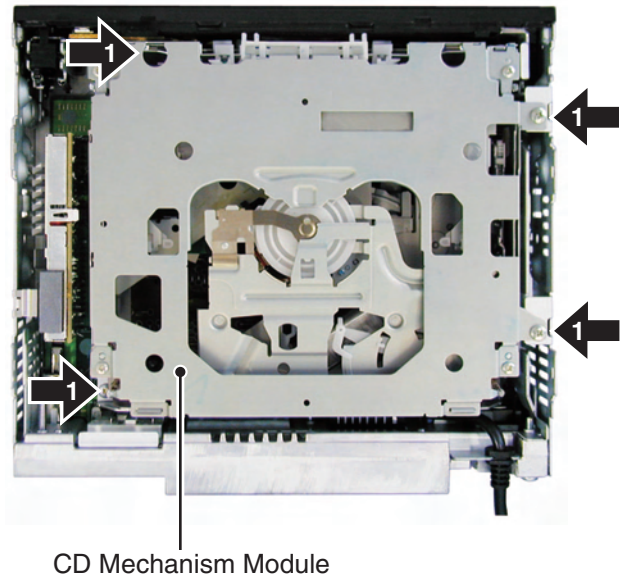


Fig.6

● Removing the Panel Assy (Fig.7,8)

- ➡ 1 Remove the two screws. (Fig.7)

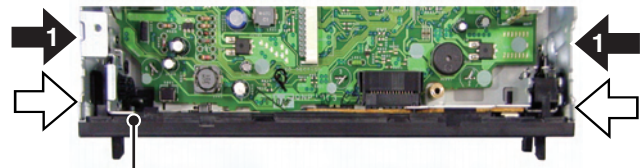


Fig.7

Push the place of the arrows
and then remove Panel Assy. (Fig.7,8)

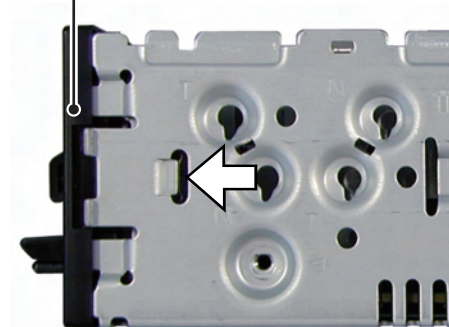


Fig.8

● Removing the Panel Unit (Fig.9,10)

- ➡ 1 Remove the two screws. (Fig.9)



Fig.9

Remove the Holder
and then remove Panel Unit. (Fig.10)

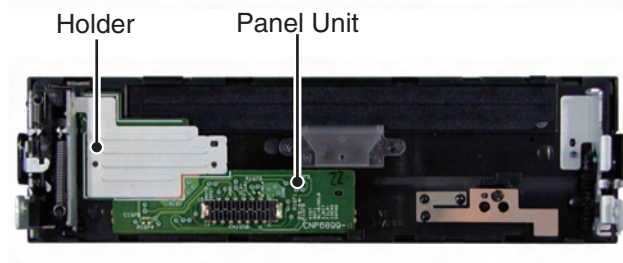


Fig.10

● Removing the Tuner amp Unit(Fig.11,12)

A

➡ **1** Remove the three screws.(Fig.11)

➡ **2** Remove the two screws.(Fig.11)

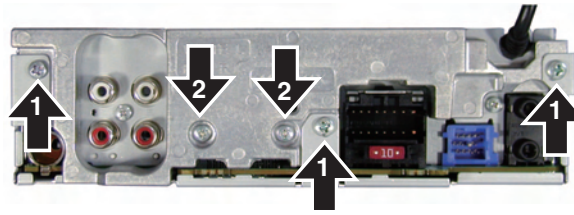


Fig.11

B

➡ **3** Straighten the tabs at four locations indicated.(Fig.12)

➡ **4** Remove the screw and then remove the Tuner amp Unit.(Fig.12)

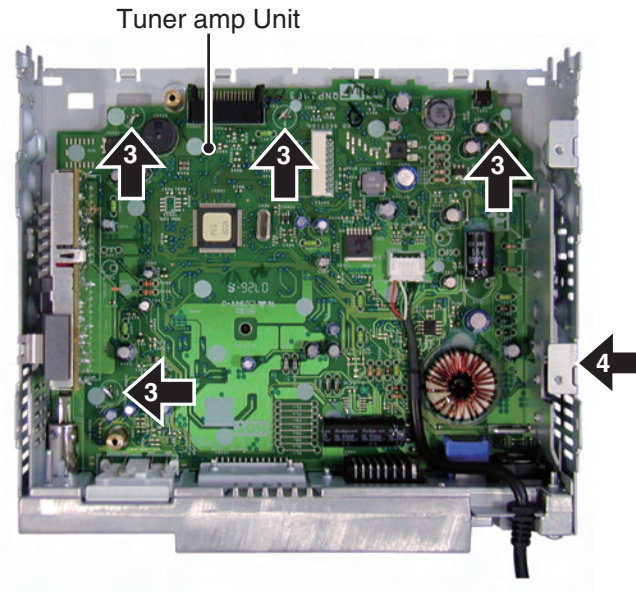


Fig.12

C

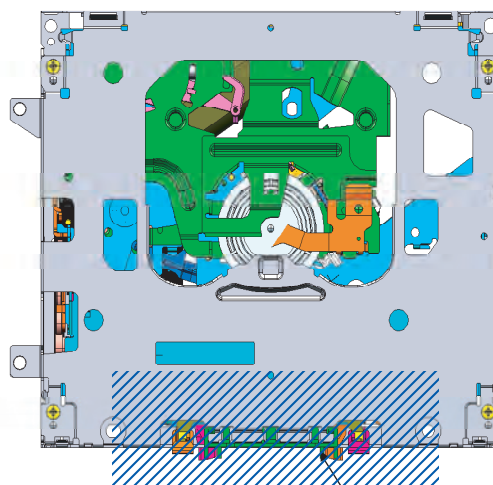
D

E

F

● How to hold the Mechanism Unit

1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.

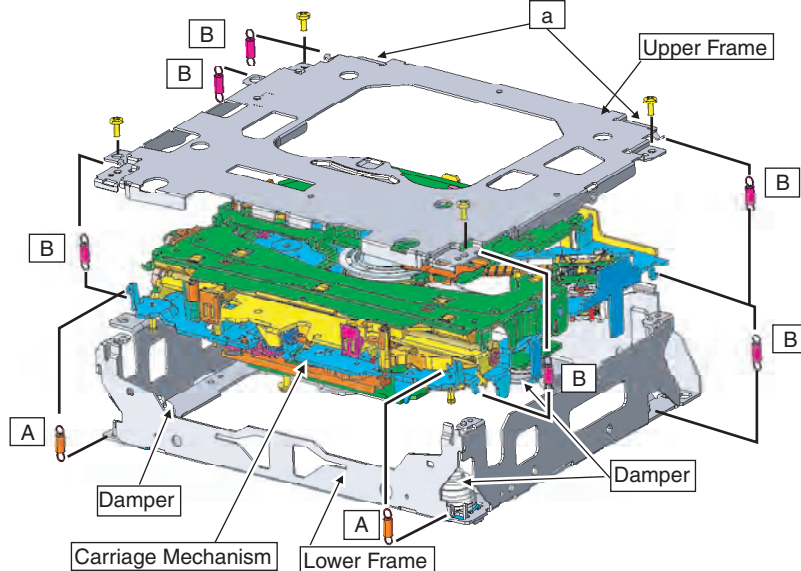


Do not squeeze this area.

● Removing the Upper and Lower Frames

1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
3. While lifting the Carriage Mechanism, remove it from the three Dampers.

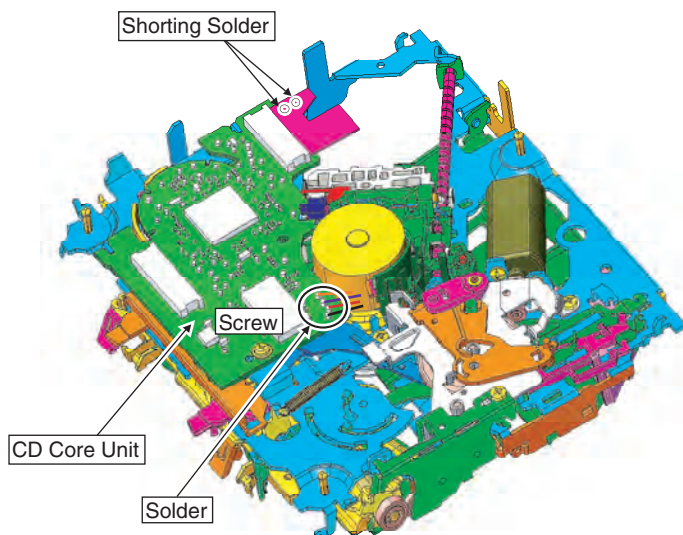
Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.



● How to remove the CD Core Unit

1. Apply Shorting Solder to the flexible cable of the Pickup, and disconnect it from the connector.
2. Unsolder the four leads, and loosen the Screw.
3. Remove the CD Core Unit.

Caution: When assembling the CD Core Unit, assemble it with the SW in a clamped state so as not to damage it.

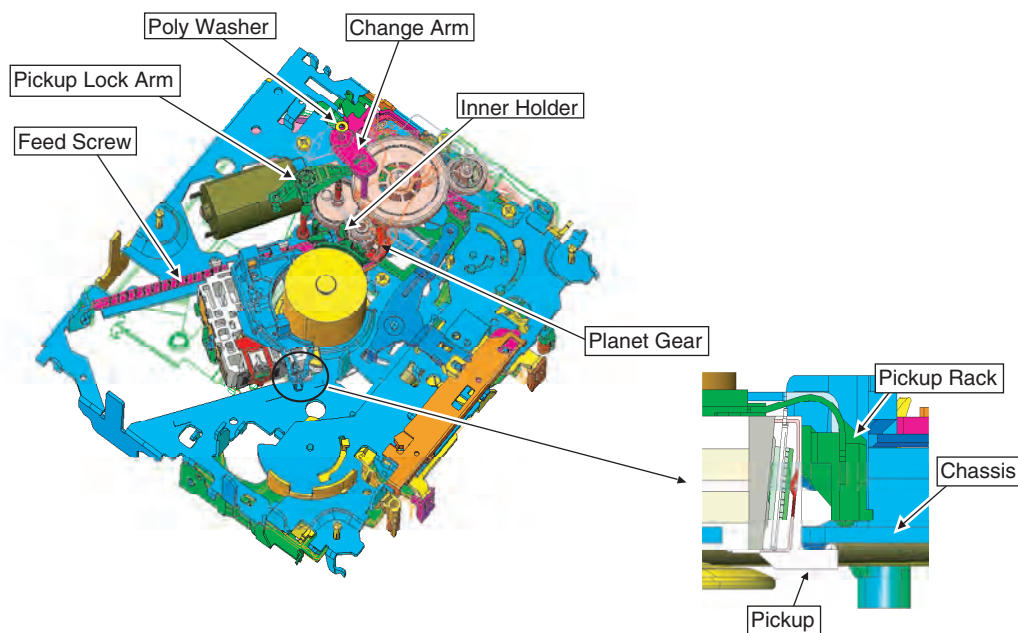


● How to remove the Pickup Unit

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. While releasing from the hook of the Inner Holder, lift the end of the Feed Screw.

Caution: When assembling, move the Planet Gear to the load/eject position before setting the Feed Screw in the Inner Holder.

Assemble the sub unit side of the Pickup, taking the plate (Chassis) in-between. When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.



8. EACH SETTING AND ADJUSTMENT

8.1 CD ADJUSTMENT

1) Cautions on adjustments

- In this product the single voltage (3.3 V) is used for the regulator. The reference voltage is the REFO1 (1.65 V) instead of the GND.

If you should mistakenly short the REFO1 with the GND during adjustment, accurate voltage will not be obtained, and the servo's misoperation will apply excessive shock to the pickup. To avoid such problems:

- a. Do not mix up the REFO1 with the GND when connecting the (-) probe of measuring instruments. Especially on an oscilloscope, avoid connecting the (-) probe for CH1 to the GND.
- b. In many cases, measuring instruments have the same potential as that for the (-) probe. Be sure to set the measuring instruments to the floating state.
- c. If you have mistakenly connected the REFO1 to the GND, turn off the regulator or the power immediately.

- Before mounting and removing filters or leads for adjustment, be sure to turn off the regulator.

- For stable circuit operation, keep the mechanism operating for about one minute or more after the regulator is turned on.

- In the test mode, any software protections will not work. Avoid applying any mechanical or electrical shock to the mechanism during adjustment.

- The RFI and RFO signals with a wide frequency range are easy to oscillate. When observing the signals, insert a resistor of 1k ohms in series.

- The load and eject operation is not guaranteed with the mechanism upside down. If the mechanism is blocked due to mistaken eject operation, reset the product or turn off and on the ACC to restore it.

2) Test mode

This mode is used to adjust the CD mechanism module.

- To enter the test mode.
While pressing the 4 and 6 keys at the same time, reset.
- To exit from the test mode.
Turn off the ACC and back up.

Notes:

- a. During ejection, do not press any other keys than the EJECT key until the loaded disc is ejected.
- b. If you have pressed the (→) key or (←) key during focus search, turn off the power immediately to protect the actuator from damage caused by the lens stuck.
- c. For the TR jump modes except 100TR, the track jump operation will continue even if the key is released.
- d. For the CRG move and 100TR jump modes, the tracking loop will be closed at the same time when the key is released.
- e. When the power is turned off and on, the jump mode is reset to the single TR (91), the RF amp gain is set to 0 dB, and the auto-adjustment values are reset to the default settings.

8.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT



• Note :

The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

• Purpose :

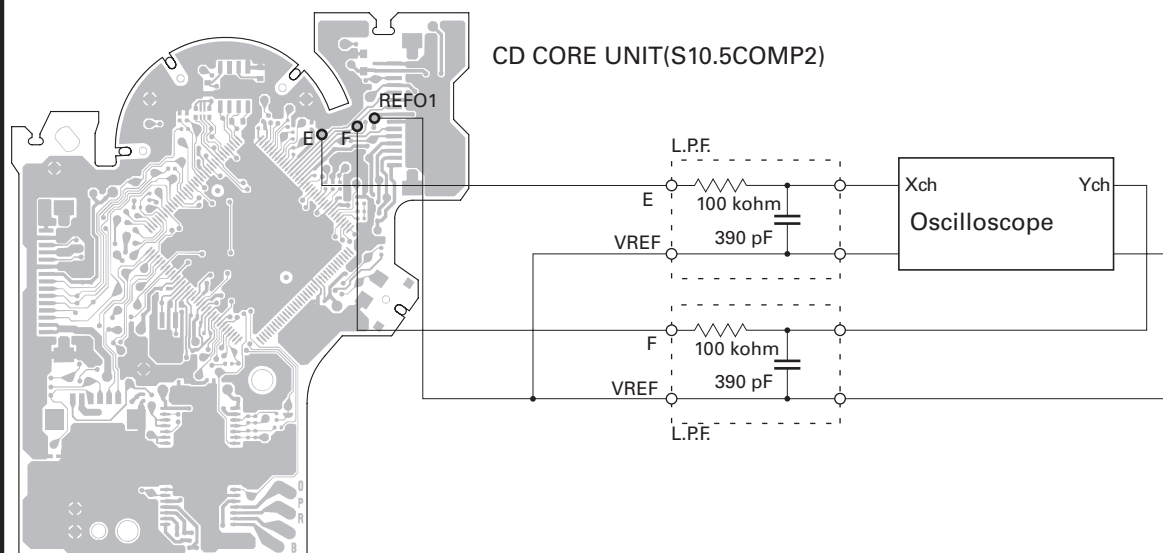
To check that the grating is within an acceptable range when the PU unit is changed.

• Symptoms of Mal-adjustment :

If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• Method :

- Measuring Equipment
 - Oscilloscope, Two L.P.F.
- Measuring Points
 - E, F, REFO1
- Disc
 - TCD-782
- Mode
 - TEST MODE



• Checking Procedure

1. In test mode, load the disc and switch the 3V regulator on.
2. Using the → and ← buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75 degrees. Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75 degrees try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75 degrees then the mechanism should be judged to be at fault.

• Note

Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• Hint

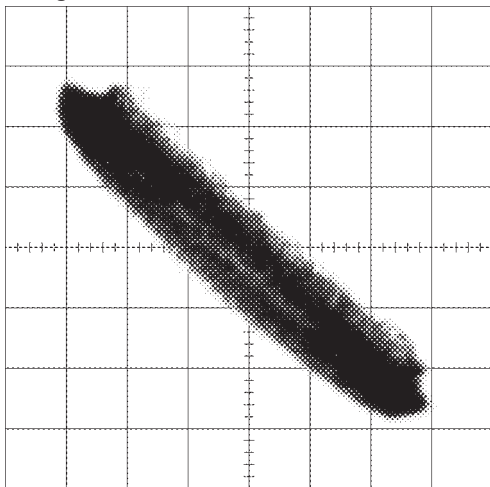
Reloading the disc changes the clamp position and may decrease the "wobble".

Grating waveform

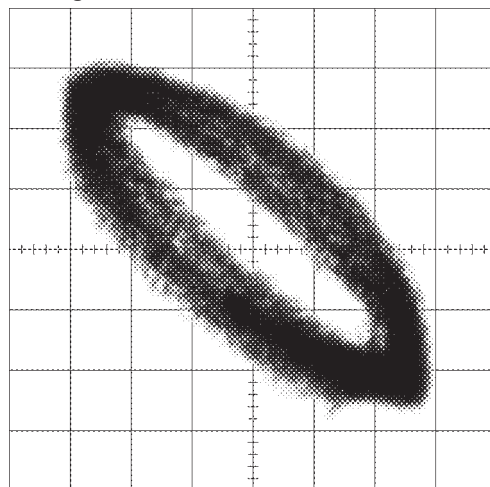
Ech → Xch 20 mV/div, AC

Fch → Ych 20 mV/div, AC

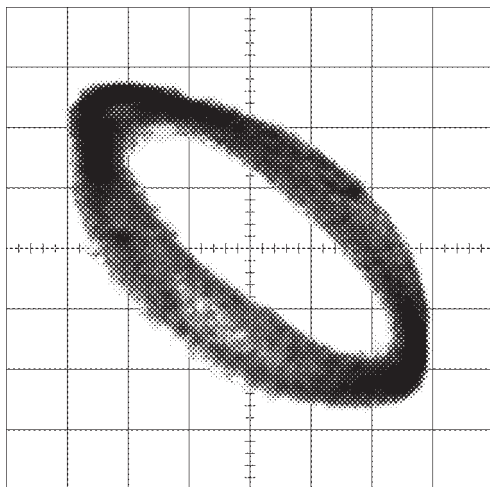
0 degrees



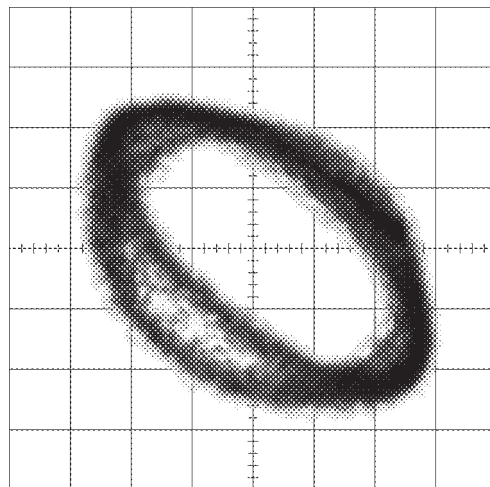
30 degrees



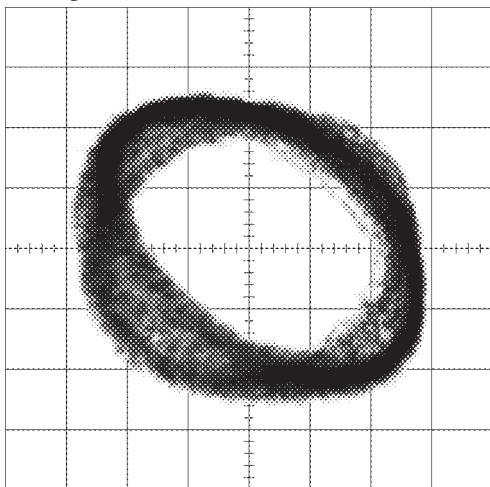
45 degrees



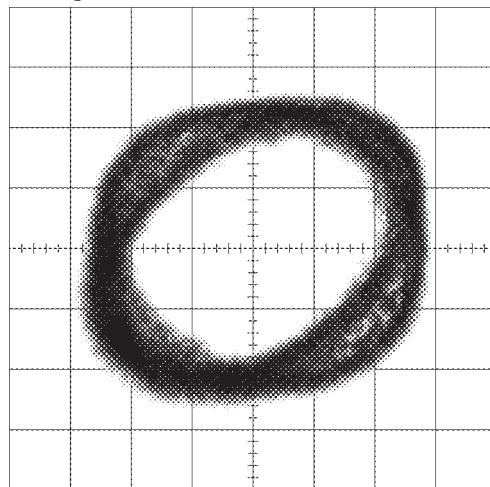
60 degrees



75 degrees



90 degrees



8.3 PCL OUTPUT CONFIRMATION



● PCL output

In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the TESTIN IC601(Pin 61) terminal to H.

The clock signal is output from the PCL terminal IC601(Pin 37).


The frequency of the clock signal is 468 750 Hz that is one 32th of the fundamental frequency.

9. EXPLODED VIEWS AND PARTS LIST

NOTES : • Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.

• The  mark found on some component parts indicates the importance of the safety factor of the part.

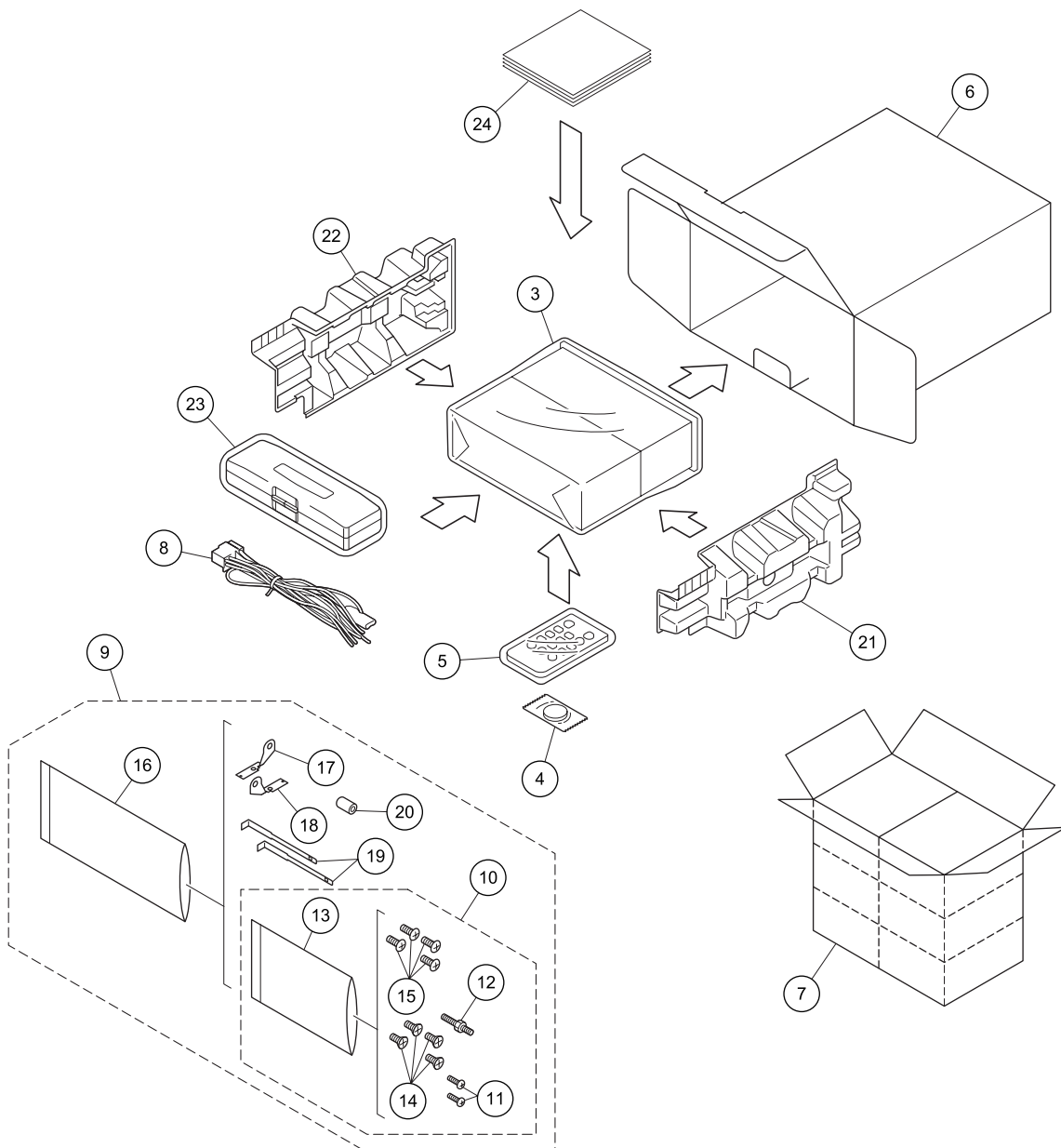
Therefore, when replacing, be sure to use parts of identical designation.

• Screw adjacent to  mark on the product are used for disassembly.

• For the applying amount of lubricants or glue, follow the instructions in this manual.

(In the case of no amount instructions, apply as you think it appropriate.)

9.1 PACKING



5

6

7

8

PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	.....		15	Screw		TRZ50P080FTC
	2	.....		16	Polyethylene Bag		CEG1160
	3	Polyethylene Bag	CEG1227	17	Holder(L)		See Contrast table(2)
*	4	Battery	CEX1065	18	Holder(R)		See Contrast table(2)
	5	Remote Control Assy	CXC8885	19	Handle		CND3707
	6	Unit Box	See Contrast table(2)	20	Bush		CNV3930
	7	Contain Box	See Contrast table(2)	21	Protector		XHP7016
	8	Cord Assy	XDP7001	22	Protector		XHP7017
	9	Accessory Assy	See Contrast table(2)	23	Case Assy		QXA3049
	10	Screw Assy	See Contrast table(2)	24-1	Caution Card		CRP1310
	11	Screw	See Contrast table(2)	*	24-2	Caution Card	See Contrast table(2)
	12	Screw	CBA1650	24-3	Owner's Manual		See Contrast table(2)
*	13	Polyethylene Bag	CEG-127	*	24-4	Warranty Card	See Contrast table(2)
	14	Screw	CRZ50P090FTC				

(2) CONTRAST TABLE

DEH-4090MP/XN/ID and DEH-6010MP/XN/UR are constructed the same except for the following:

Mark	No.	Description	DEH-4090MP/XN/ID	DEH-6010MP/XN/UR
	6	Unit Box	QHG3010	QHG3011
	7	Contain Box	QHL3010	QHL3011
	9	Accessory Assy	CEA6708	XEA7011
	10	Screw Assy	CEA3849	CEA5317
	11	Screw	Not used	BPZ20P060FTB
	17	Holder(L)	Not used	CND1249
	18	Holder(R)	Not used	CND1250
*	24-2	Caution Card	QRP3002	QRP3001
	24-3	Owner's Manual	QRB3004	QRB3005
*	24-4	Warranty Card	Not used	CRY1265

Owner's Manual,Installation Manual

Part No.	Language
QRB3004	English
QRB3005	Russian

1 2 3 4

9.2 EXTERIOR(1)

A

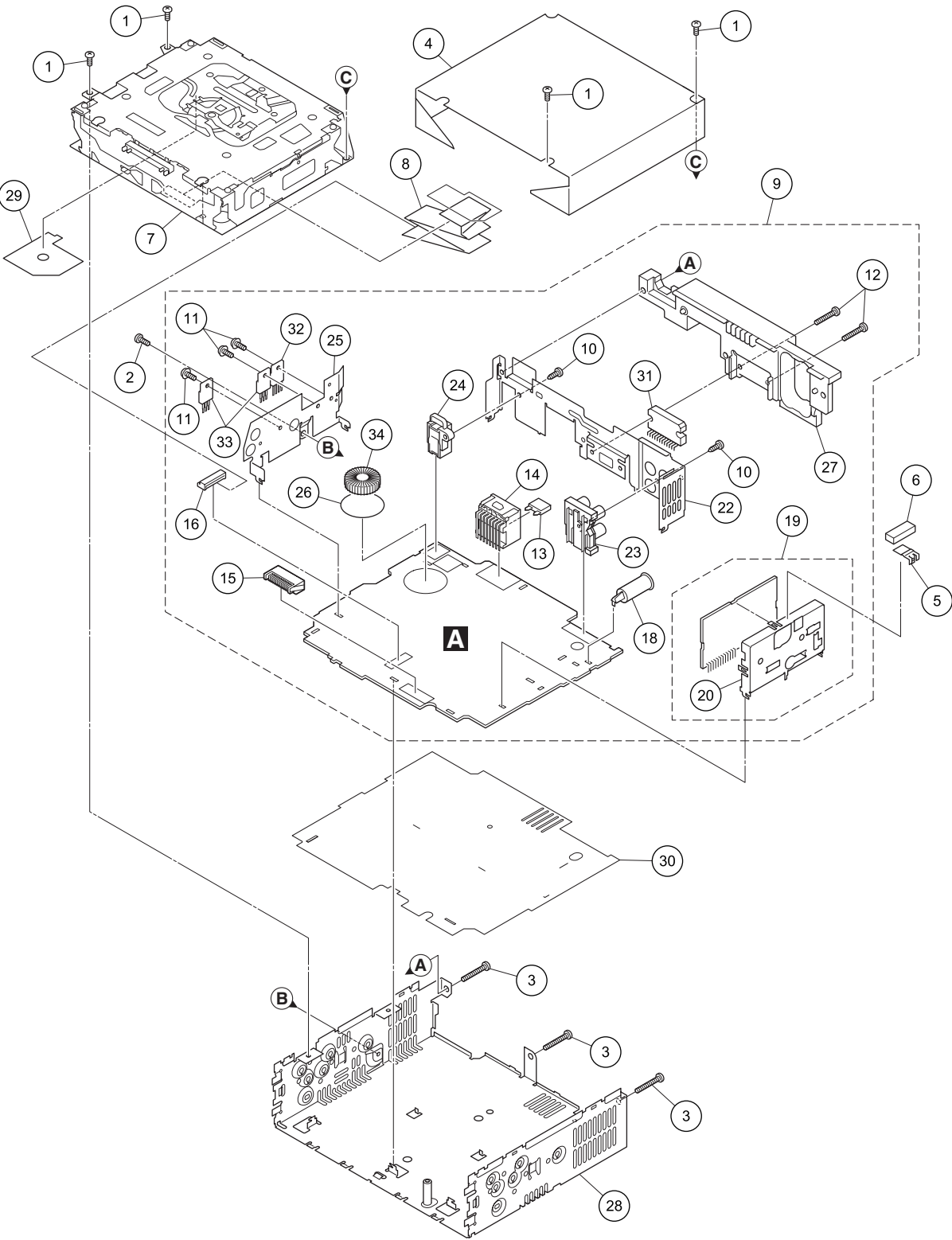
B

C

D

E

F



<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Screw	BSZ26P060FTC	18	Antenna Jack(ANT401)	CKX1056
2	Screw	BSZ30P060FTC	19	FM/AM Tuner Unit	CWE2098
3	Screw	BSZ30P200FTC	20	Holder	CND4324
4	Sheet	See Contrast table(2)			
5	Earth Plate	CNC8915	21	*****	
			22	Holder	QNC3002
6	Cushion	CNM8890	23	Pin Jack(CN301)	CKB1051
7	CD Mechanism Module(S10.5)	CXK5763	24	Jack(CN151)	XKS7006
8	Cable	QDE3002	25	Holder	XNC7030
9	Tuner Amp Unit	See Contrast table(2)			
10	Screw	BPZ26P070FTC	26	Insulator	XNM7031
			27	Heat Sink	YNR5031
11	Screw	BSZ26P060FTC	28	Chassis Unit	QXA3013
12	Screw	BSZ26P200FTC	29	Insulator	XNM7106
⚠ 13	Fuse(10 A)	YEK5001	30	Insulator	CNN2339
14	Plug(CN981)	CKM1376			
15	Plug(CN801)	CKS3537	31	IC(IC351)	PAL007C
			32	IC(IC911)	NJM2388F84
16	Connector(CN701)	CKS3829	33	Transistor(Q751,Q901)	2SD2396
17	*****		34	Choke Coil(L981)	CTH1280

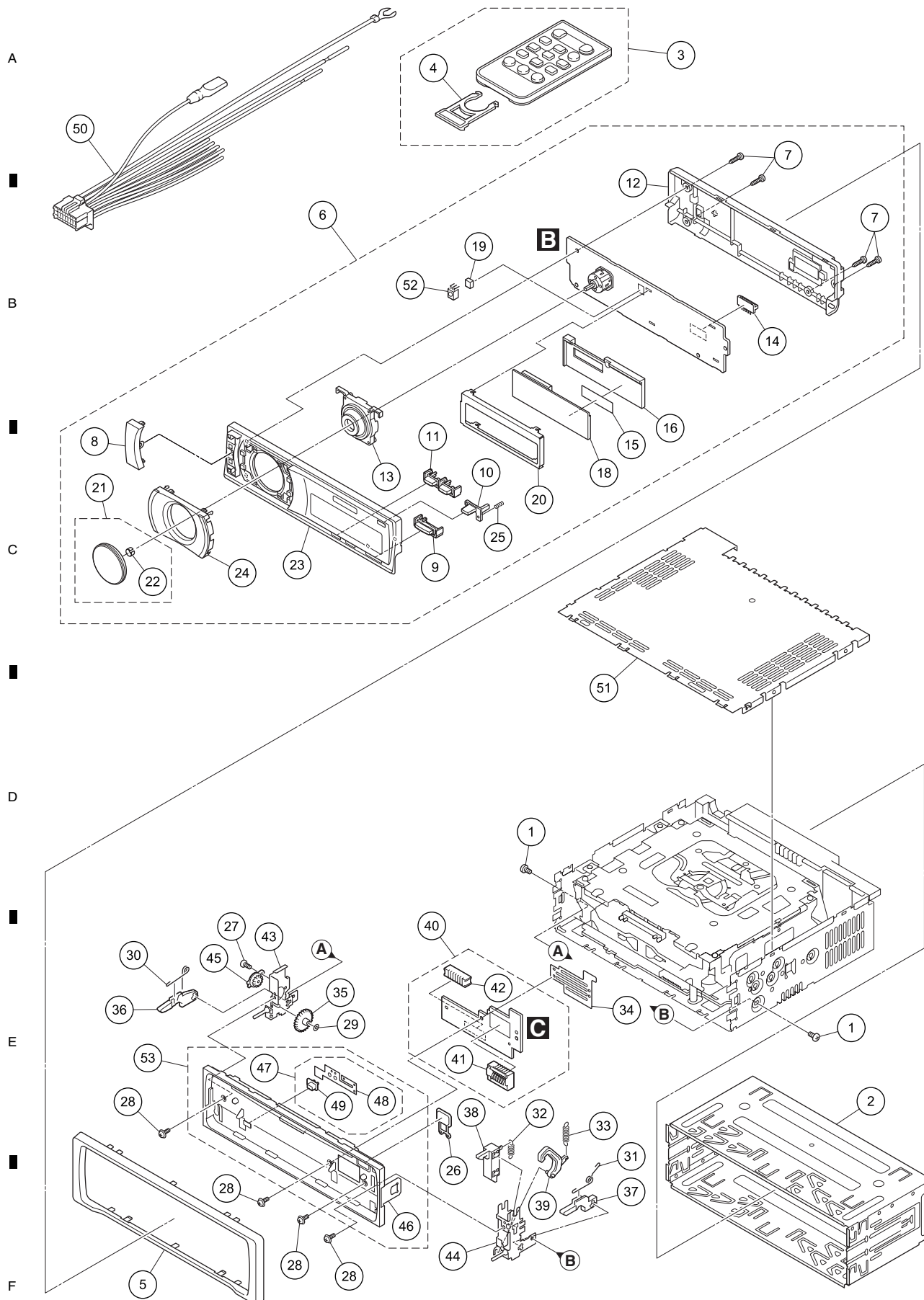
(2) CONTRAST TABLE

DEH-4090MP/XN/ID and DEH-6010MP/XN/UR are constructed the same except for the following:

Mark	No.	Description	DEH-4090MP/XN/ID	DEH-6010MP/XN/UR
NOTE	4	Sheet	CNM9404	Not used
	9	Tuner Amp Unit	QWM3017	QWM3028

<NOTE> Sheet, #4 has to be replaced if it is removed.

9.3 EXTERIOR(2)



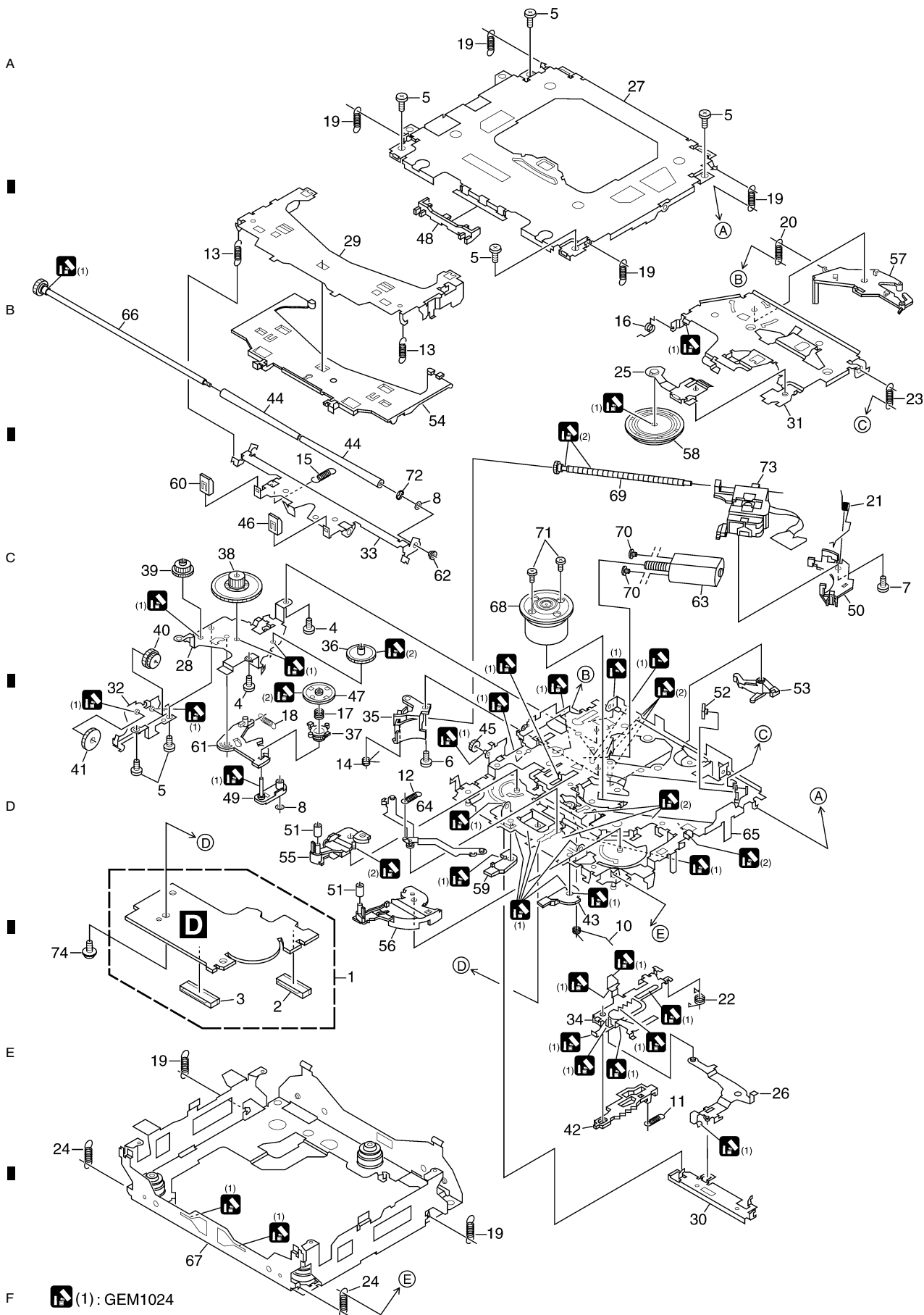
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BMZ30P040FTB	28	Screw(M2 x 4.5)	CBA1925
2	Holder	CND3598	29	Washer	CBF1038
3	Remote Control Assy	CXC8885	30	Spring	CBH2650
4	Cover	CNS7068			
5	Panel	QNS3004	31	Spring	CBH2651
			32	Spring	CBH2652
6	Detach Grille Assy	See Contrast table(2)	33	Spring	CBH2653
7	Screw	BPZ20P080FTB	34	Holder	CND1254
8	Button(SRC, BAND)	QAC3004	35	Gear	CNV5997
9	Button(LIST)	QAC3005			
10	Button(OPEN)	QAC3007	36	Arm	CNV7400
			37	Arm	CNV7401
11	Button(SW, CLOCK)	QAC3014	38	Arm	CNV7402
12	Cover	QNS3002	39	Arm	CNV7403
13	Lighting Conductor	QNV3001	40	Panel Unit	CWM8758
14	Connector(CN1901)	CKS5207			
15	Double Side Tape	CNN1878	41	Connector(CN1951)	CKS4806
			42	Connector(CN1950)	CKS5192
16	Holder	CNV9735	43	Holder Unit	CXB9501
17	*****		44	Holder Unit	CXB9502
18	OLED	MXS8249	45	Damper Unit	CXB9503
19	Spacer	QNM3006			
20	Holder	XNC7028	46	Panel Unit	QXA3036
			47	Sub Spring Assy	XXA7363
21	Knob Unit	QXA3006	48	Spring	CBL1512
22	Spring	XBL7005	49	Pin	CNV6486
23	Grille Unit	See Contrast table(2)	50	Cord Assy	XDP7001
24	Button(DISP, RDM, COMP, RPT)	QAC3012			
25	Spring	XBH7001	51	Case	YNB5014
			52	IC(IC1901)	GP1UX51RK
26	Button(EJECT)	CAC7752	53	Sub Panel Assy	QXA3025
27	Screw(M2 x 4)	CBA1649			

(2) CONTRAST TABLE

DEH-4090MP/XN/ID and DEH-6010MP/XN/UR are constructed the same except for the following:

Mark	No.	Description	DEH-4090MP/XN/ID	DEH-6010MP/XN/UR
	6	Detach Grille Assy	QXA3005	QXA3037
	23	Grille Unit	QXA3033	QXA3034

9.4 CD MECHANISM MODULE



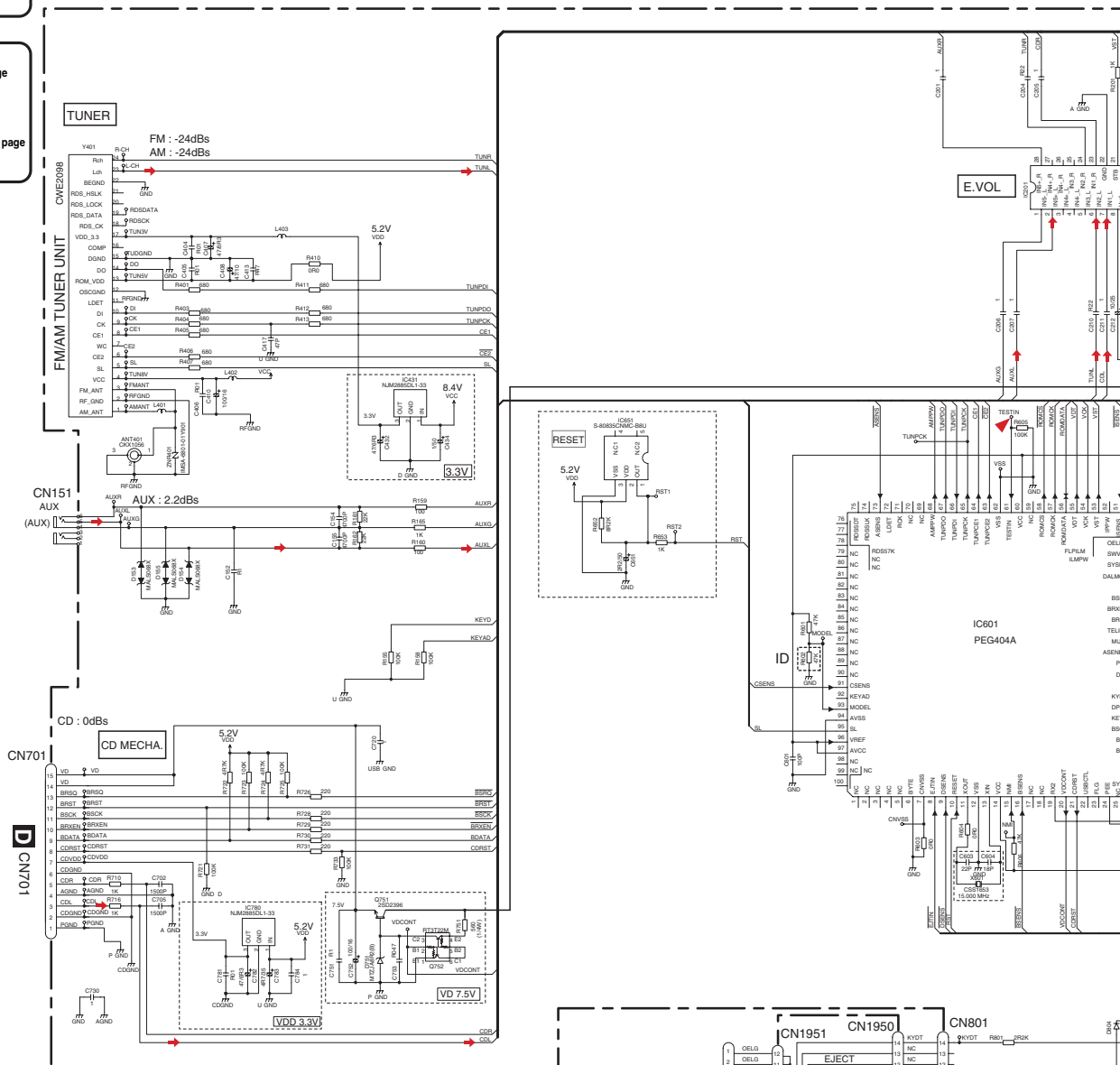
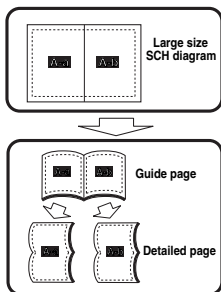
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	CD Core Unit(S10.5COMP2)	CWX3514	50	Rack	CNV8342	
2	Connector(CN101)	CKS4182				
3	Connector(CN701)	CKS4808	51	Roller	CNV8343	A
4	Screw	BMZ20P025FTC	52	Holder	CNV8344	
5	Screw	BSZ20P040FTC	53	Arm	CNV8345	
			54	Guide	CNV8347	
6	Screw(M2 x 3)	CBA1511	55	Arm	CNV8348	
7	Screw(M2 x 4)	CBA1835				
8	Washer	CBF1038	56	Arm	CNV8349	
9	.....		57	Arm	CNV8350	
10	Spring	CBH2609	58	Clamper	CNV8365	
			59	Arm	CNV8386	
11	Spring	CBH2612	60	Guide	CNV8396	B
12	Spring	CBH2614				
13	Spring	CBH2616	61	Arm	CNV8413	
14	Spring	CBH2617	62	Collar	CNV8938	
15	Spring	CBH2620	63	Motor Unit(M2)	CXC4026	
			64	Arm Unit	CXC4027	
16	Spring	CBH2855	65	Chassis Unit	CXC4028	
17	Spring	CBH2937				
18	Spring	CBH2735	66	Gear Unit	CXC4029	
19	Spring	CBH2854	67	Frame Unit	CXC4031	
20	Spring	CBH2642	68	Motor Unit(M1)	CXC7134	
			69	Screw Unit	CXC6359	C
21	Spring	CBH2856	70	Screw	JFZ20P020FTC	
22	Spring	CBH2857				
23	Spring	CBH2860	71	Screw	JGZ17P022FTC	
24	Spring	CBH2861	72	Washer	YE20FTC	
25	Spring	CBL1686	73	Pickup Unit(P10.5)(Service)	CXX1942	
			74	Screw	IMS26P030FTC	
26	Arm	CND1909				
27	Frame	CND2582				
28	Bracket	CND2583				
29	Arm	CND2584				
30	Lever	CND2585				D
31	Arm	CND2586				
32	Bracket	CND2587				
33	Arm	CND2588				
34	Lever	CND2589				
35	Holder	CNV7201				
36	Gear	CNV7207				
37	Gear	CNV7208				
38	Gear	CNV7209				E
39	Gear	CNV7210				
40	Gear	CNV7211				
41	Gear	CNV7212				
42	Rack	CNV7214				
43	Arm	CNV7216				
44	Roller	CNV7218				
45	Gear	CNV7219				
46	Guide	CNV7361				
47	Gear	CNV7595				F
48	Guide	CNV7799				
49	Arm	CNV7805				

10. SCHEMATIC DIAGRAM

10.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

A-a



: The power supply is shown with the marked box.

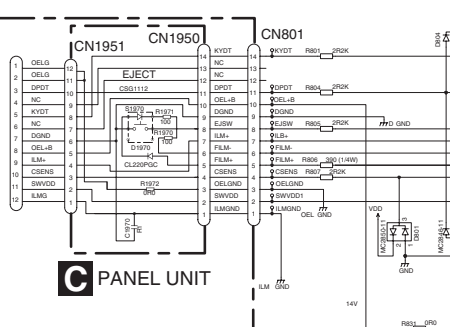
NOTE :

- Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as :
2.2 — 2R2
0.022 — R022

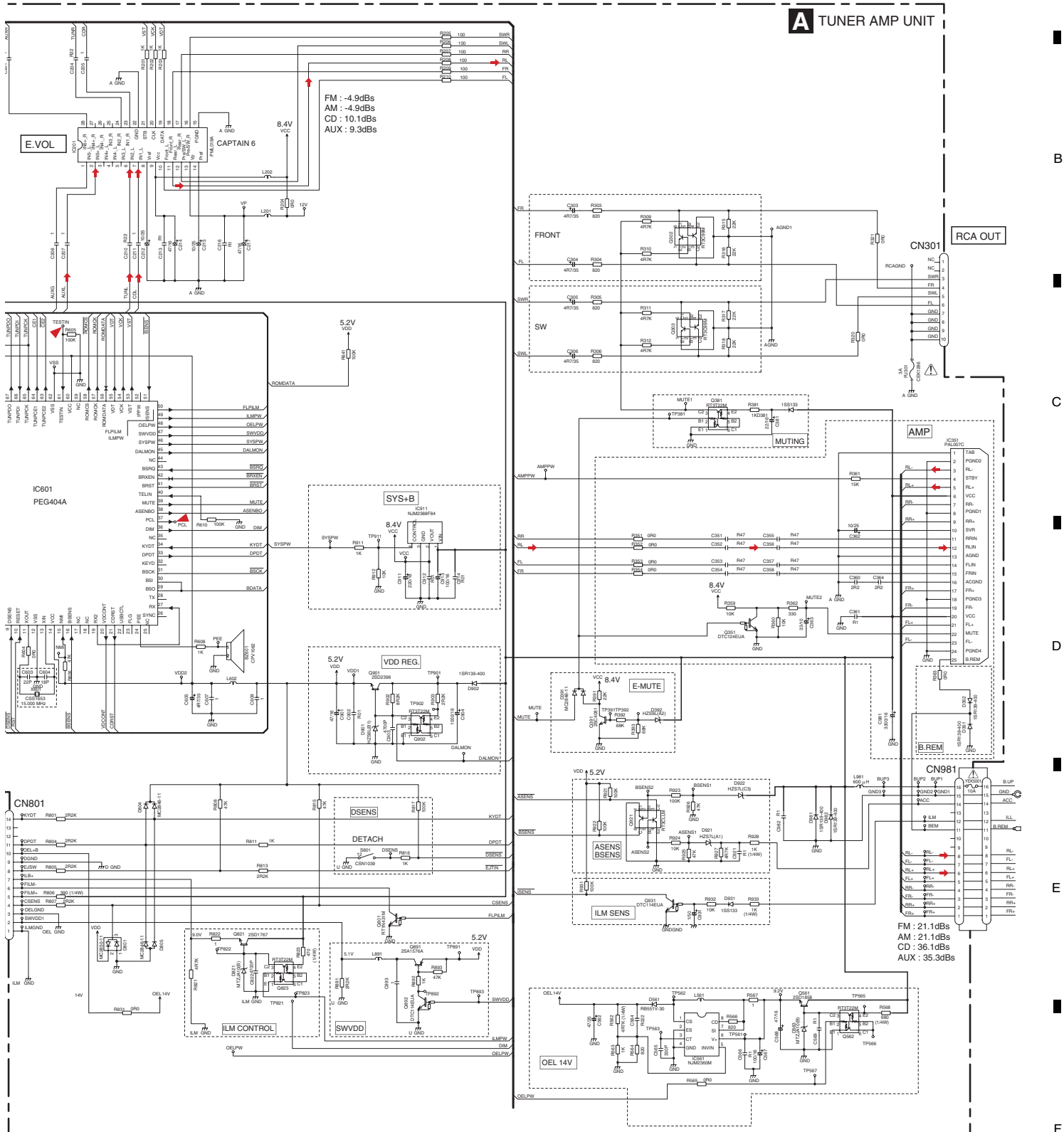
The mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.

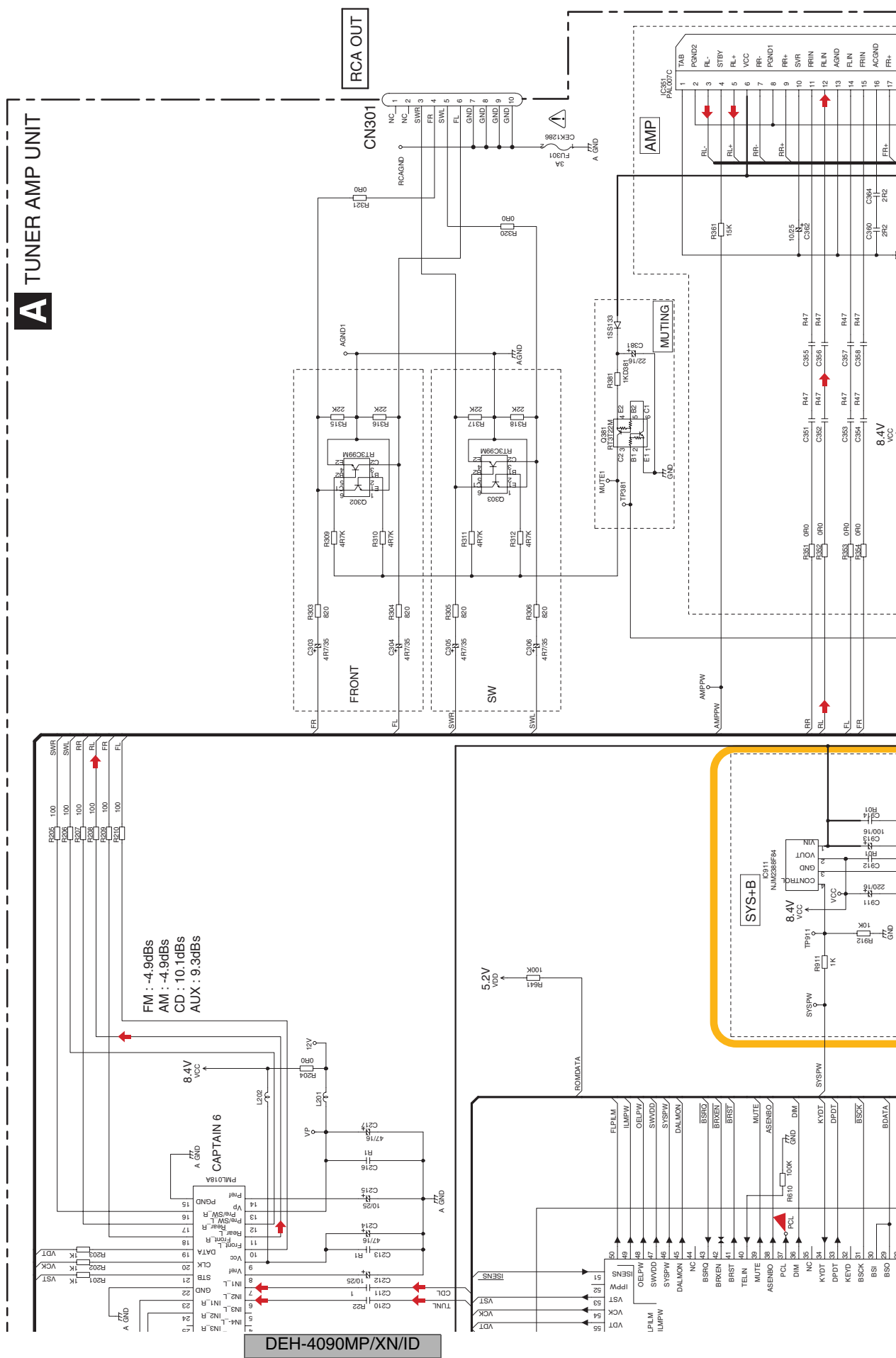
B
CN1901

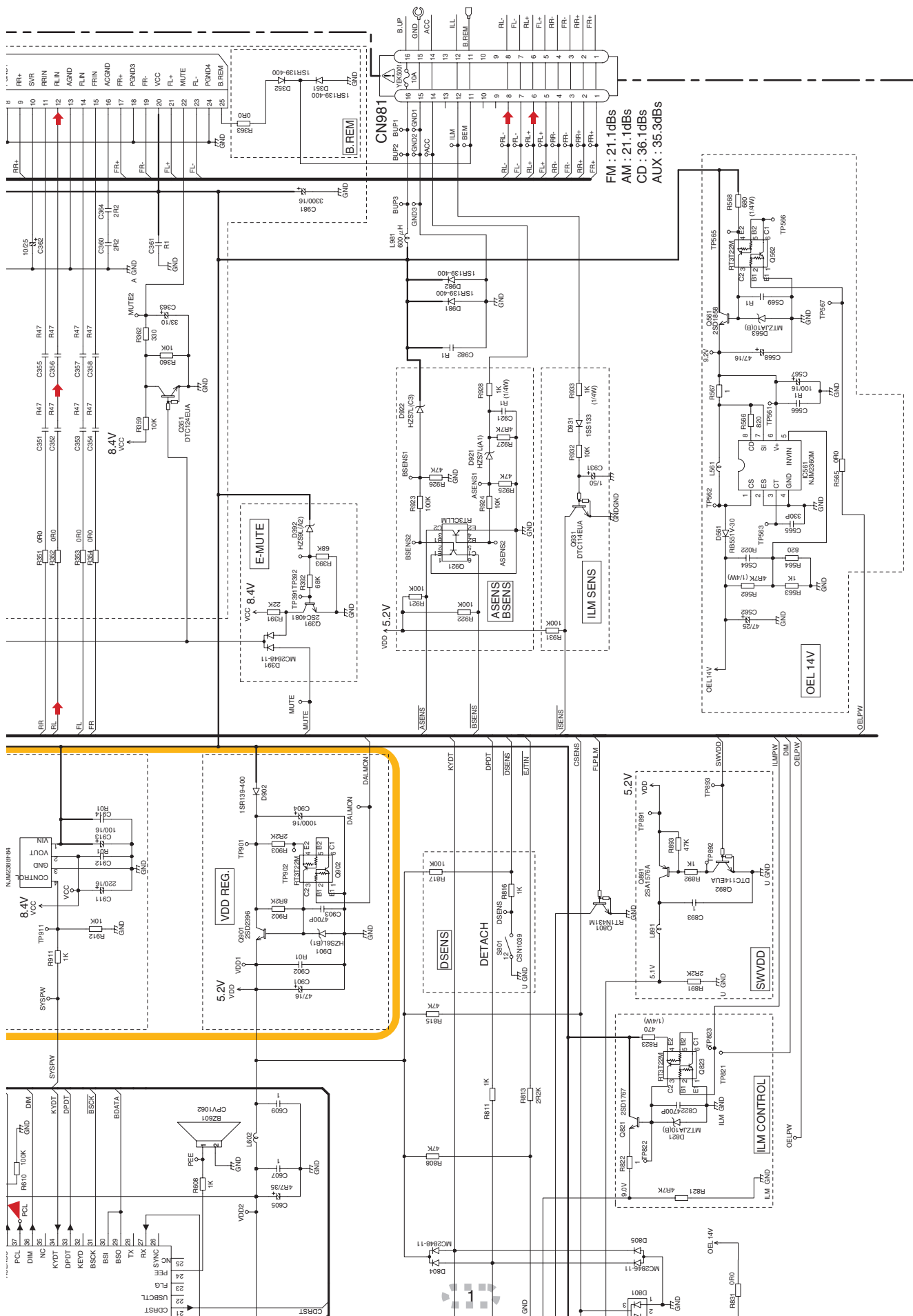


C PANEL UNIT

A-b







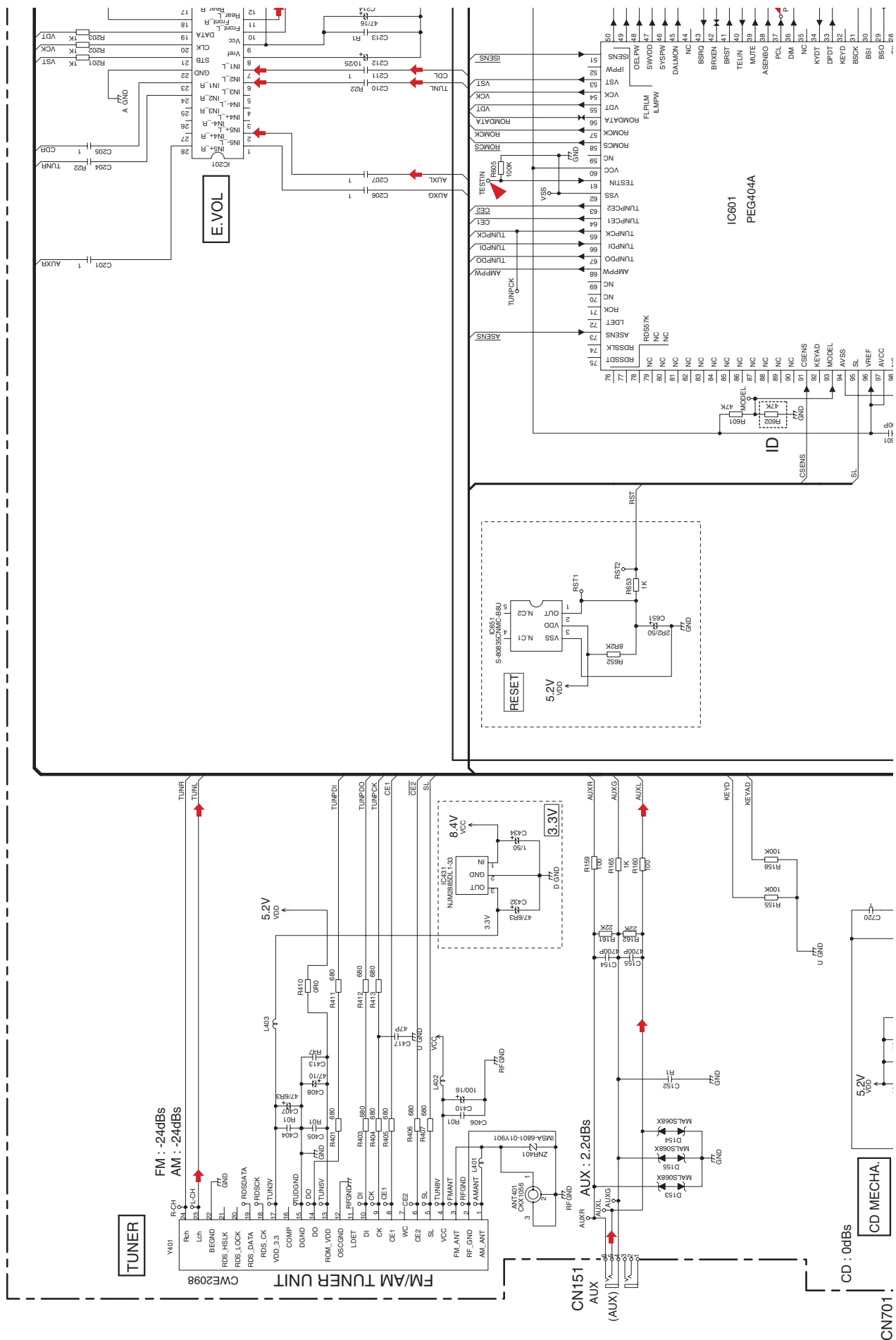
DEH-4090MP/XN/ID

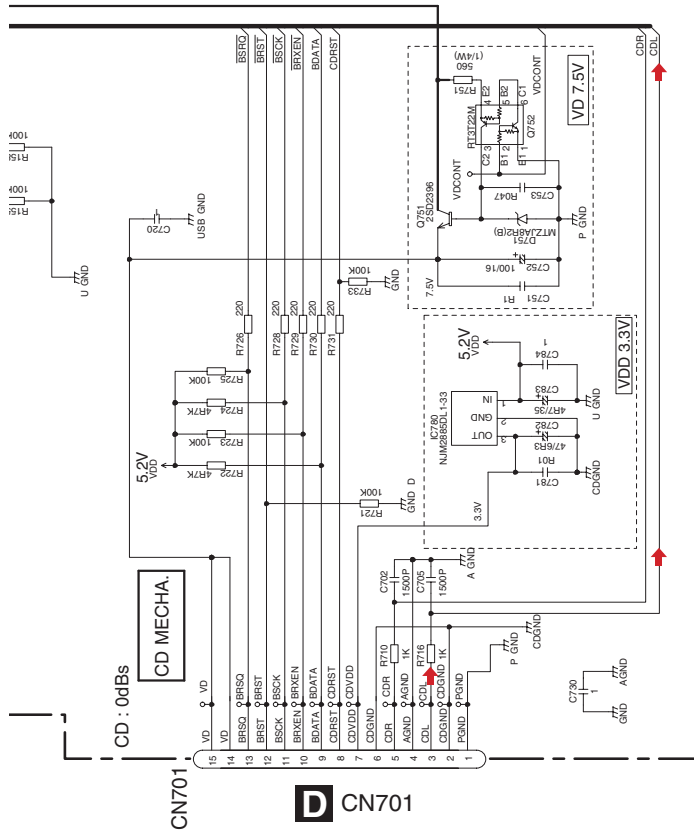
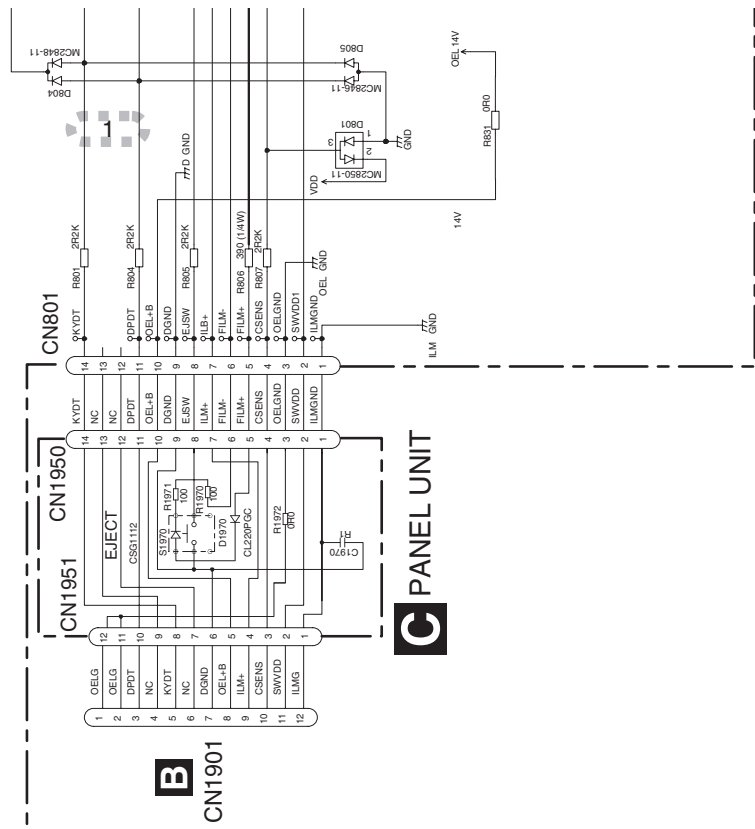
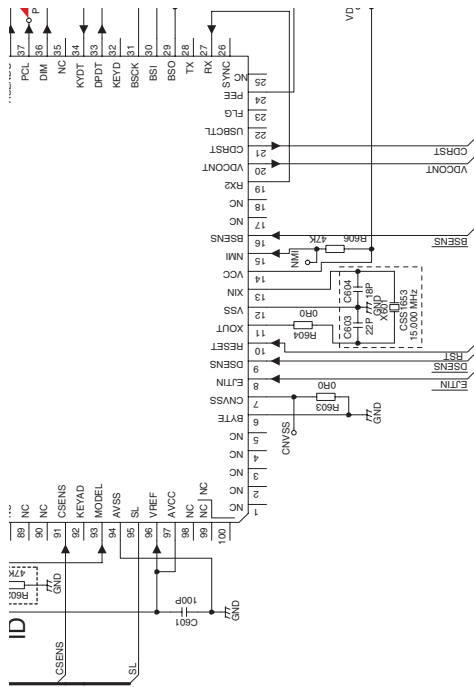
A-b

F

A-a A-b



DEH-4090MP/XN/ID





O : The power supply is shown with the marked box.

NOTE:

- | | | | |
|---|---|--|--|
|  | Symbol indicates a resistor. | | |
| | No differentiation is made between chip resistors and discrete resistors. | | Decimal points for resistor and capacitor fixed values are expressed as :
2.2 — 2R2
0.022 — R022 |
|  | Symbol indicates a capacitor. | | |
| | No differentiation is made between chip capacitors and discrete capacitors. | | |

The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

A-b

A

B

C

D

III

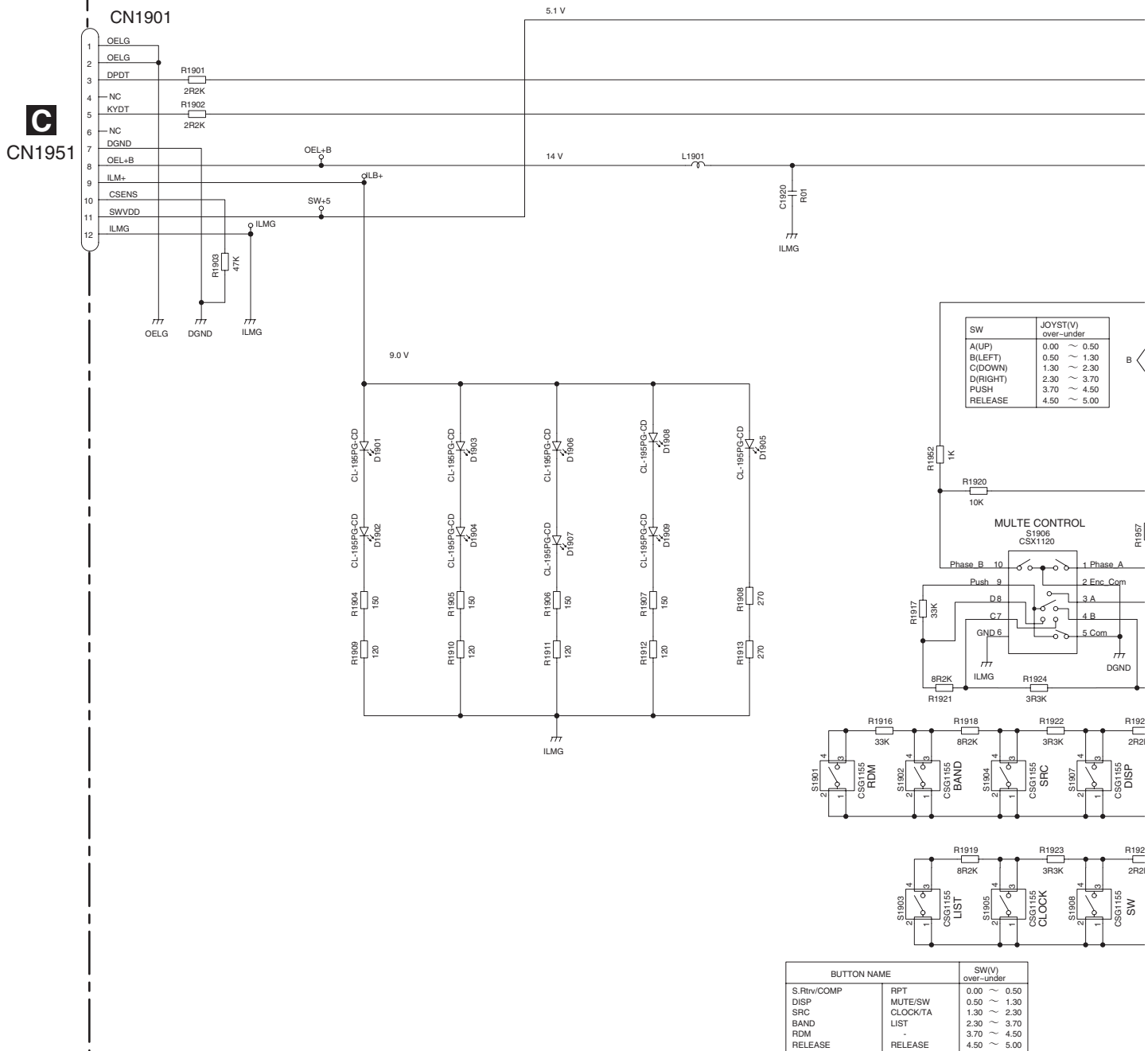
F

[illegible]

A-a	A-b
0.98	0.97
0.96	0.95
0.94	0.93
0.92	0.91
0.90	0.89
0.88	0.87
0.86	0.85
0.84	0.83
0.82	0.81
0.80	0.79
0.78	0.77
0.76	0.75
0.74	0.73
0.72	0.71
0.70	0.69
0.68	0.67
0.66	0.65
0.64	0.63
0.62	0.61
0.60	0.59
0.58	0.57
0.56	0.55
0.54	0.53
0.52	0.51
0.50	0.49
0.48	0.47
0.46	0.45
0.44	0.43
0.42	0.41
0.40	0.39
0.38	0.37
0.36	0.35
0.34	0.33
0.32	0.31
0.30	0.29
0.28	0.27
0.26	0.25
0.24	0.23
0.22	0.21
0.20	0.19
0.18	0.17
0.16	0.15
0.14	0.13
0.12	0.11
0.10	0.09
0.08	0.07
0.06	0.05
0.04	0.03
0.02	0.01
0.00	0.00

A-a C

C



D-a

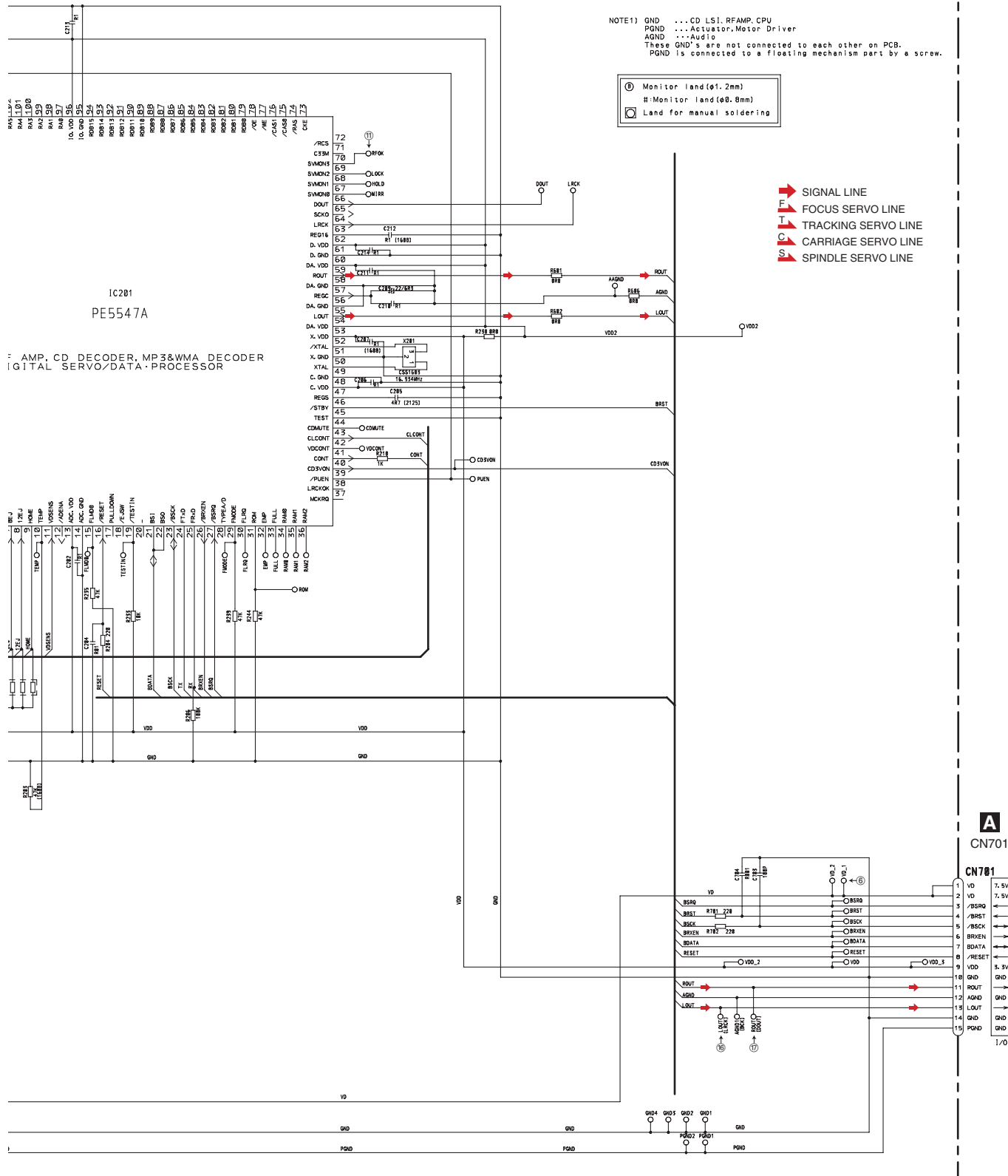
D-b

D CD CORE UNIT(S10.5COMP2)

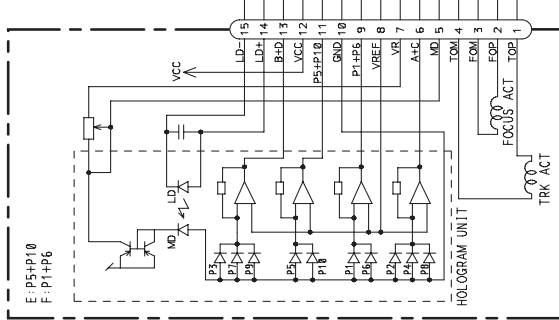
NOTE1) GND ...CD LSI, RFAMP, CPU
 PGND ...Actuator, Motor Driver
 AGND ...Audio
 These GND's are not connected to each other on PCB.
 PGND is connected to a floating mechanism part by a screw.

⑤ Monitor land(ø1.2mm)
 H:Monitor land(ø0.8mm)
 Land for manual soldering

➔ SIGNAL LINE
 F FOCUS SERVO LINE
 T TRACKING SERVO LINE
 C CARRIAGE SERVO LINE
 S SPINDLE SERVO LINE

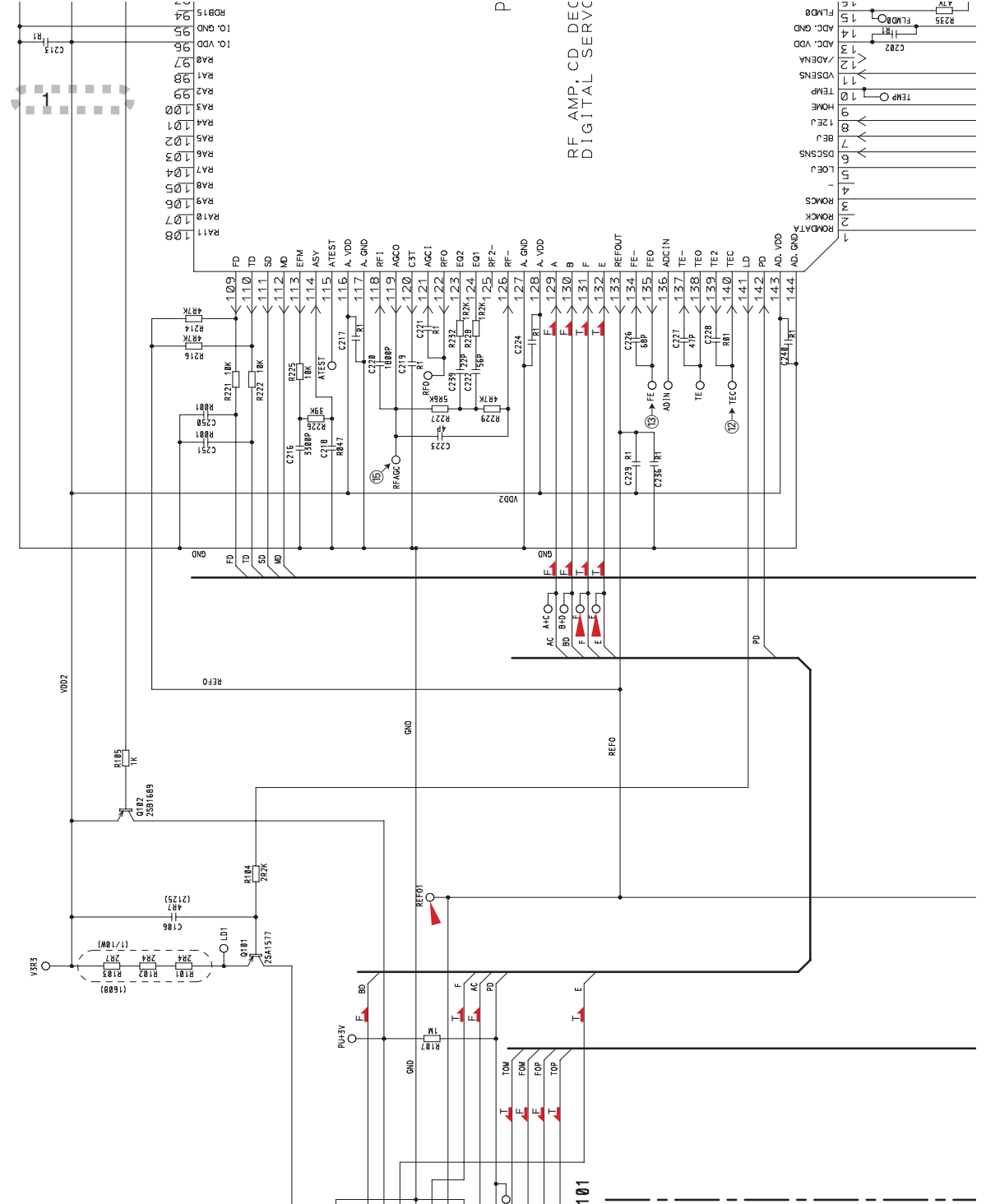


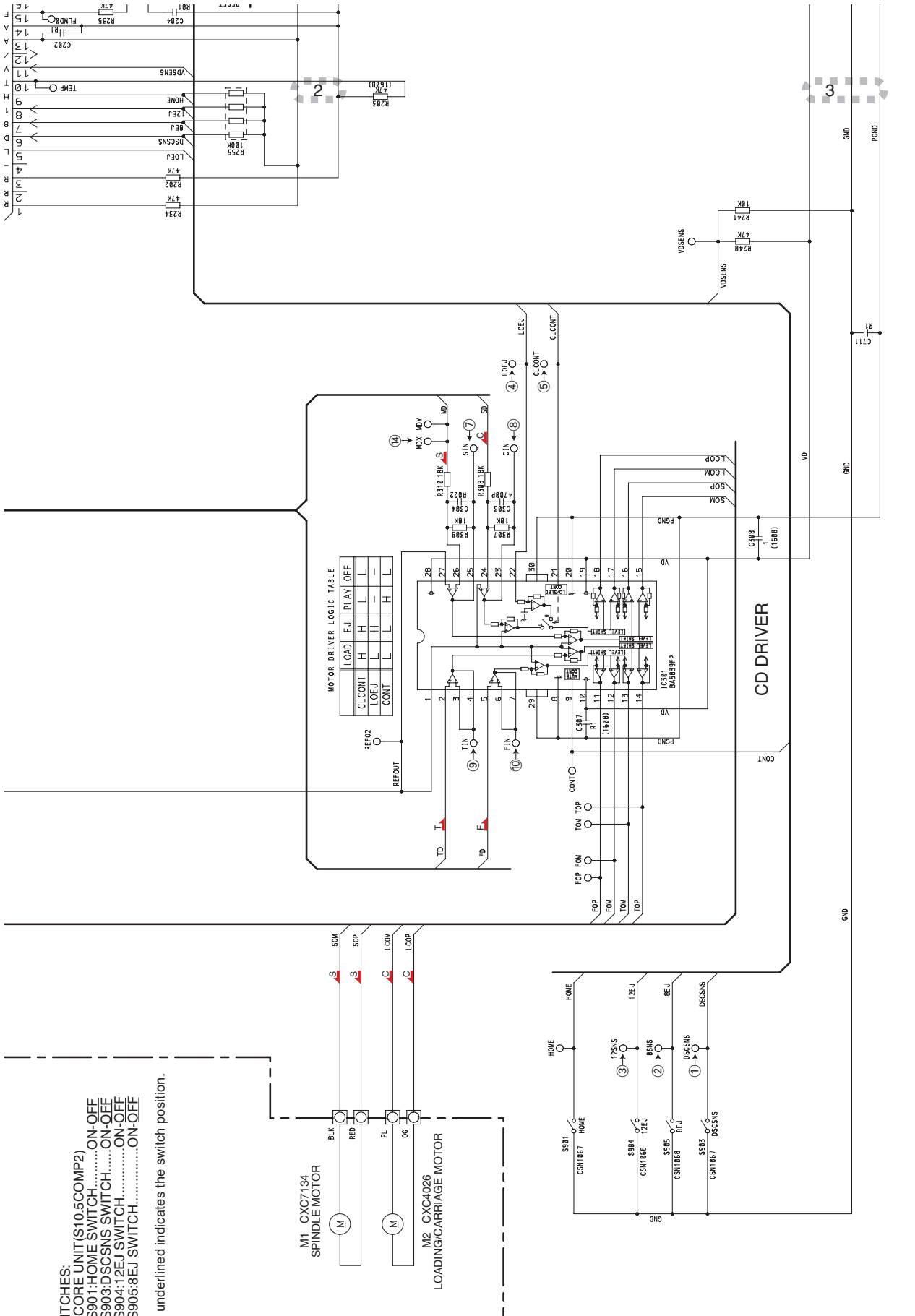
PICKUP UNIT(P10.5)(SERVICE)



F. ACT. Applying positive offset voltage to FOP.
T. ACT. Applying positive voltage to TOP.
Applying positive voltage to TOP.
Applying positive voltage to TOP.

SWITCHES:
CD CORE UNIT(S10.5COMP2) ON-OFF
S901:HOME SWITCH ON-OFF
S903:DSCSNS SWITCH ON-OFF
S904:12EJ SWITCH ON-OFF
S905:REI SWITCH ON-OFF





SWITCHES:

CD CORE UNIT (S10.5COMP2)	
S901:HOME SWITCH.....	ON-OFF
S903:DSCSNS SWITCH.....	ON-OFF
S904:12EJ SWITCH.....	ON-OFF
S905:8EJ SWITCH.....	ON-OFF

M1 CXC7134
SPINDLE MOTOR

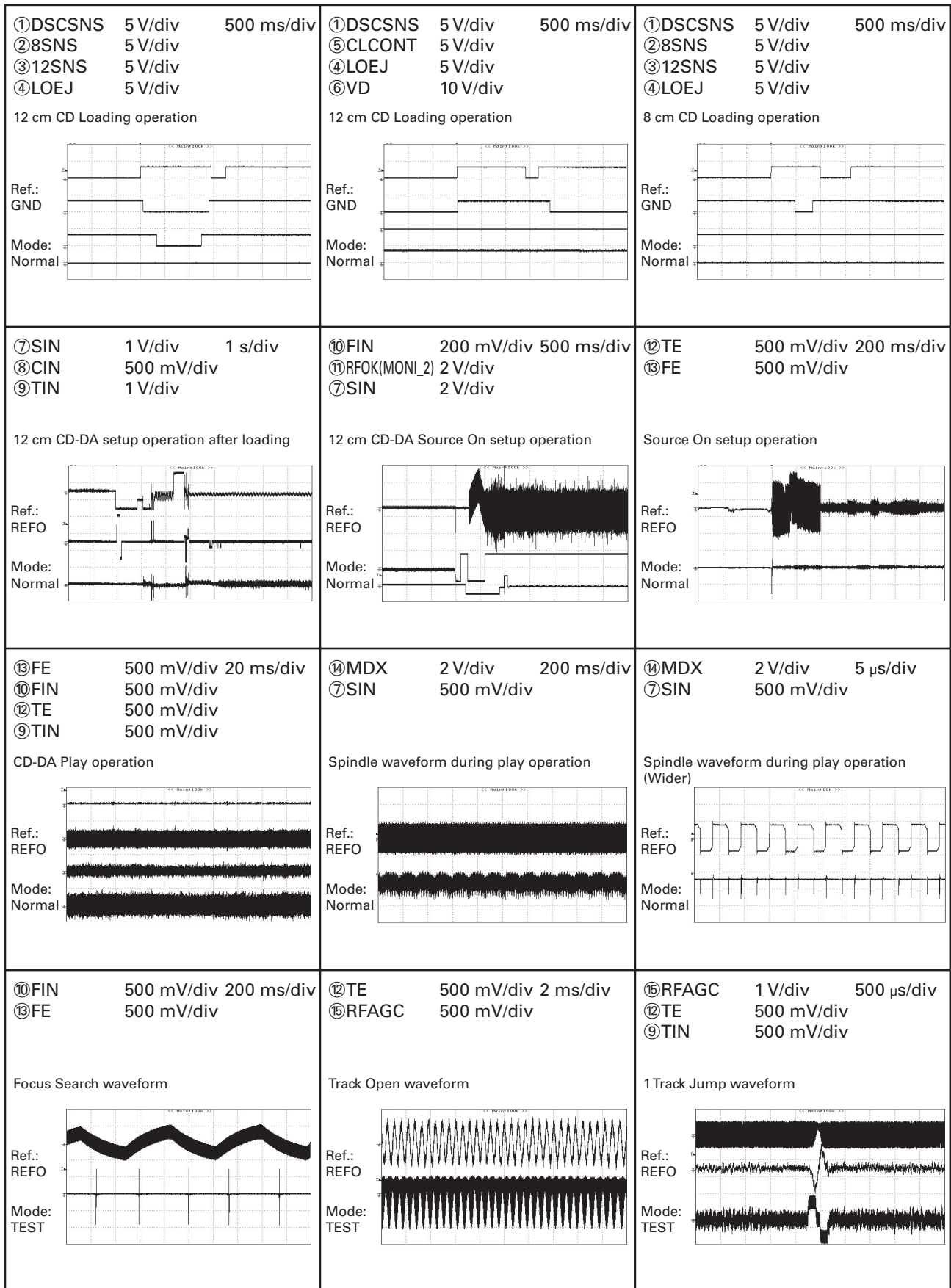
M2 CXC4026
LOADING/CARRIAGE MOTOR

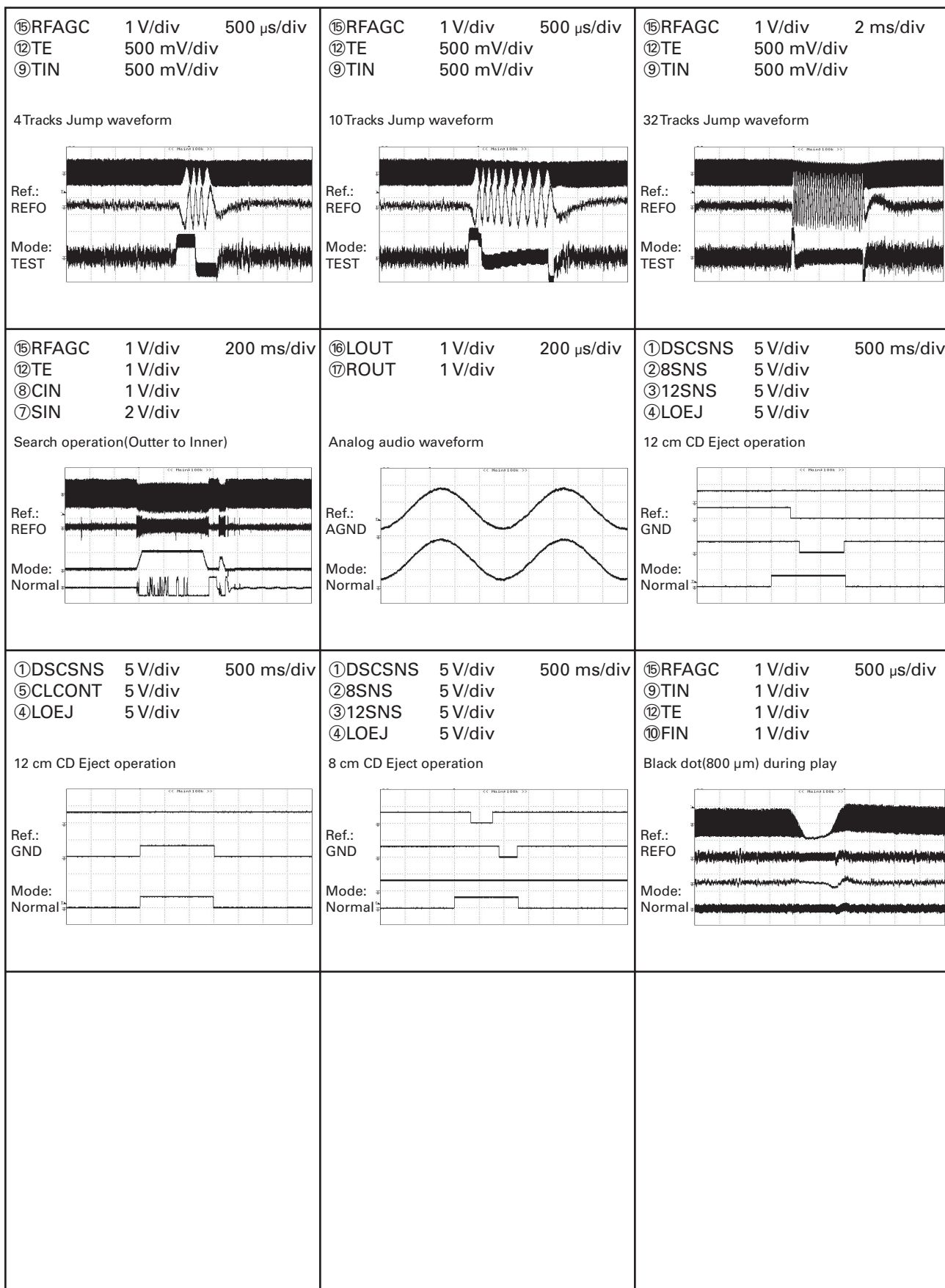
DEH-4090MP/XN/ID

10.4 WAVEFORMS

CD CORE UNIT

Note : 1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage REFO1(1.65 V)



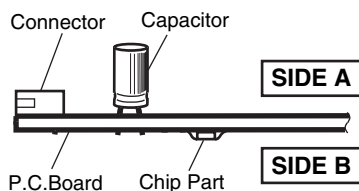


11. PCB CONNECTION DIAGRAM

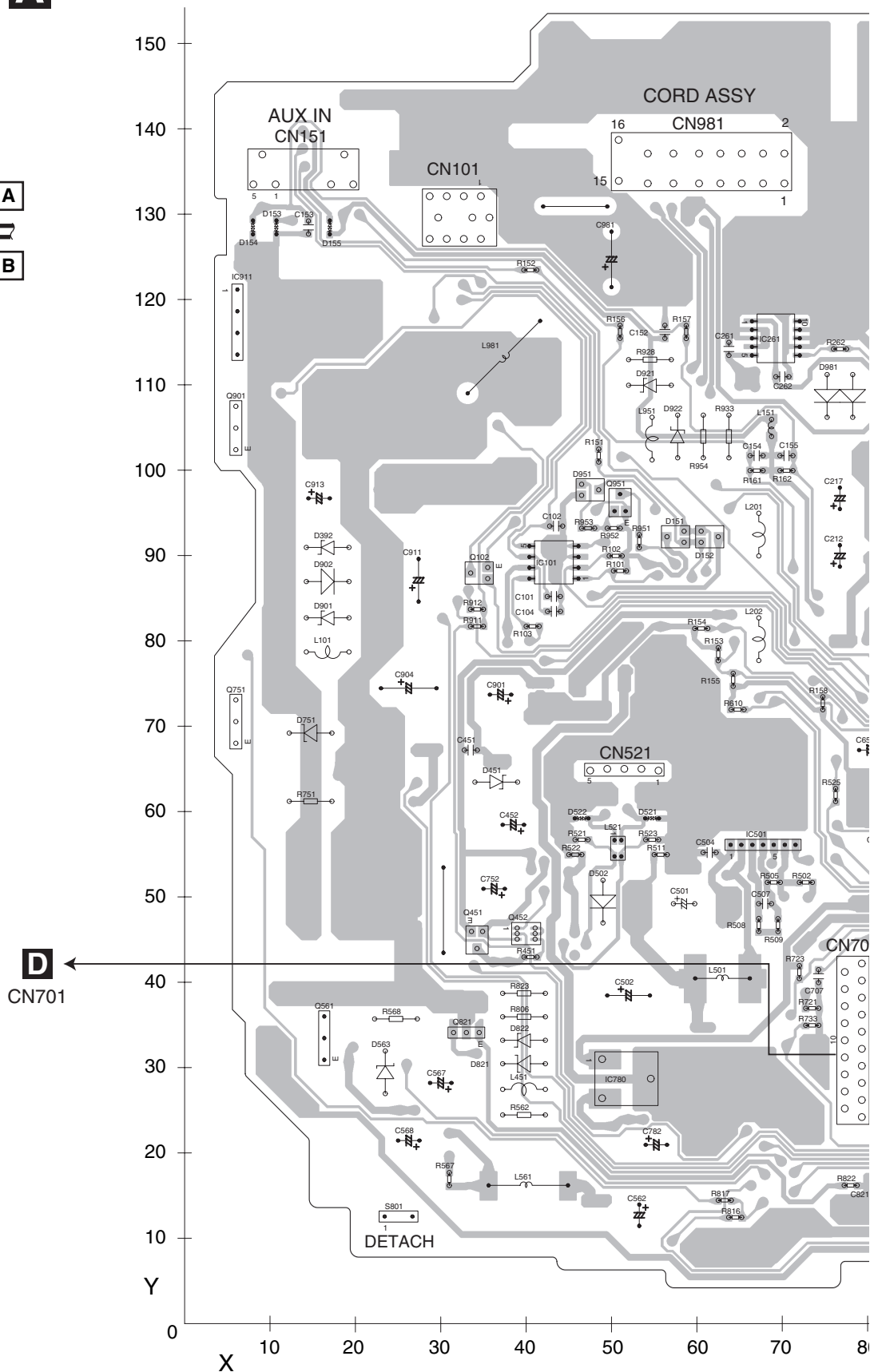
11.1 TUNER AMP UNIT

1.The parts mounted on this PCB include all necessary parts for several destination.

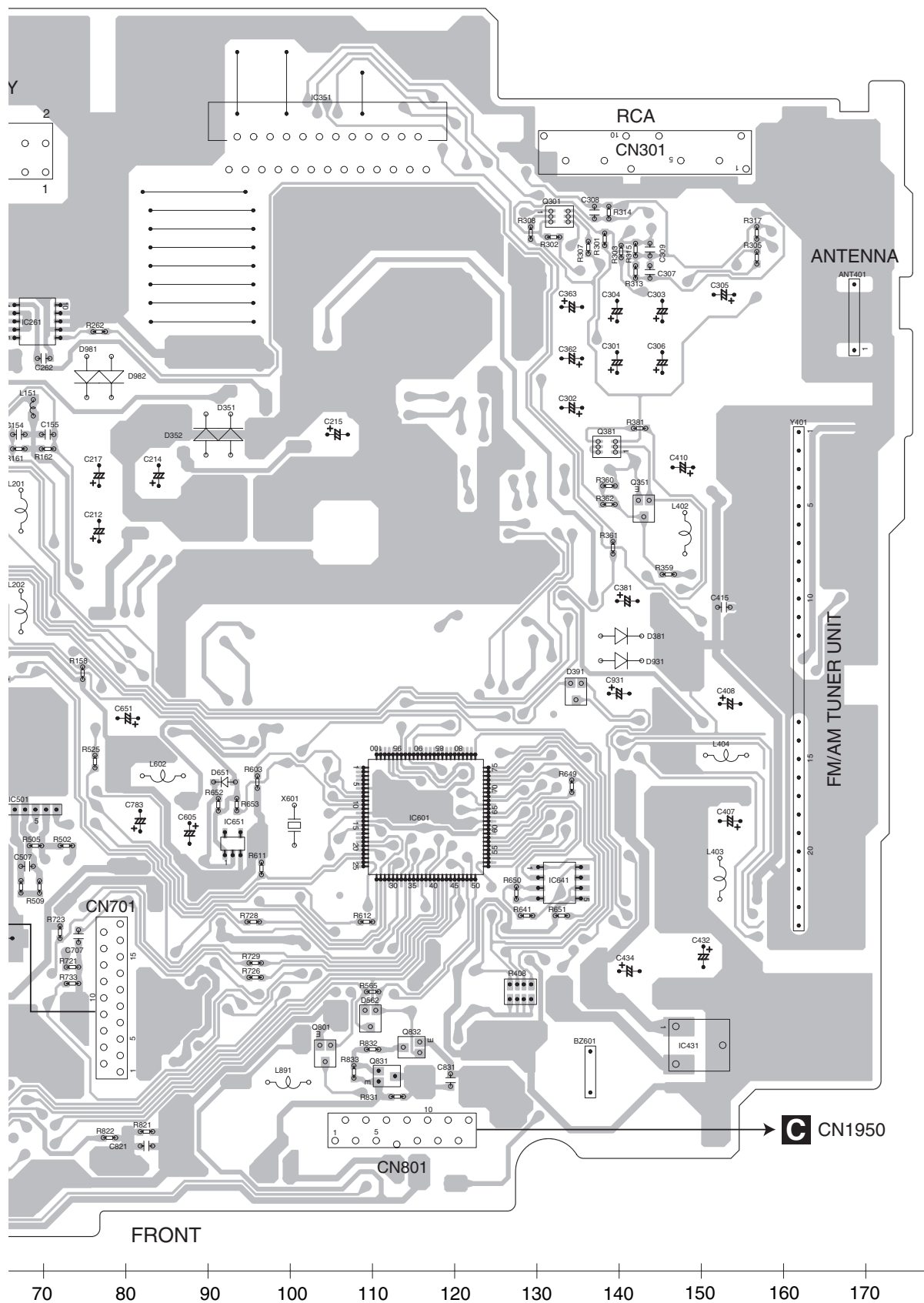
2. Viewpoint of PCB diagrams



A TUNER AMP UNIT



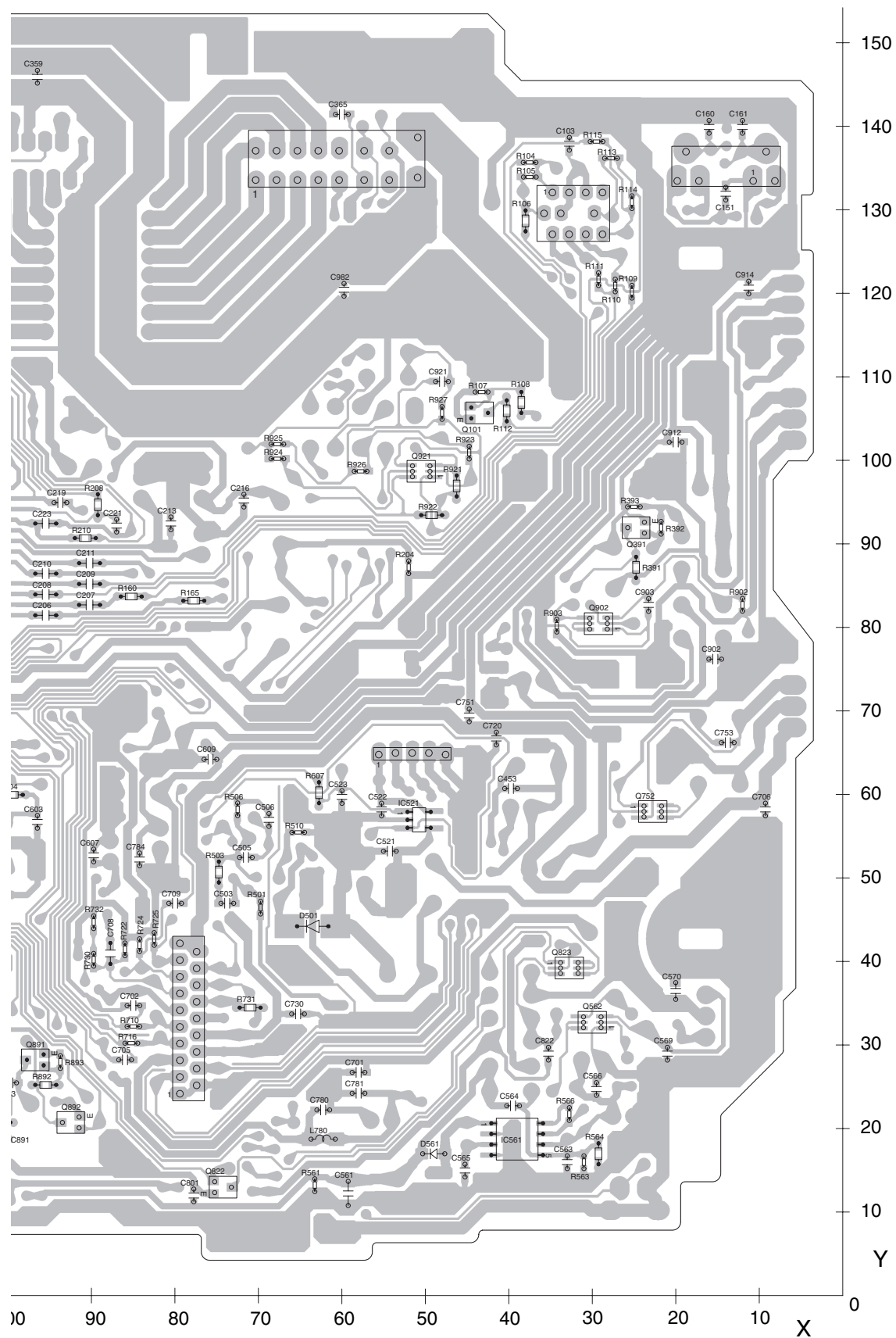
SIDE A



F

58

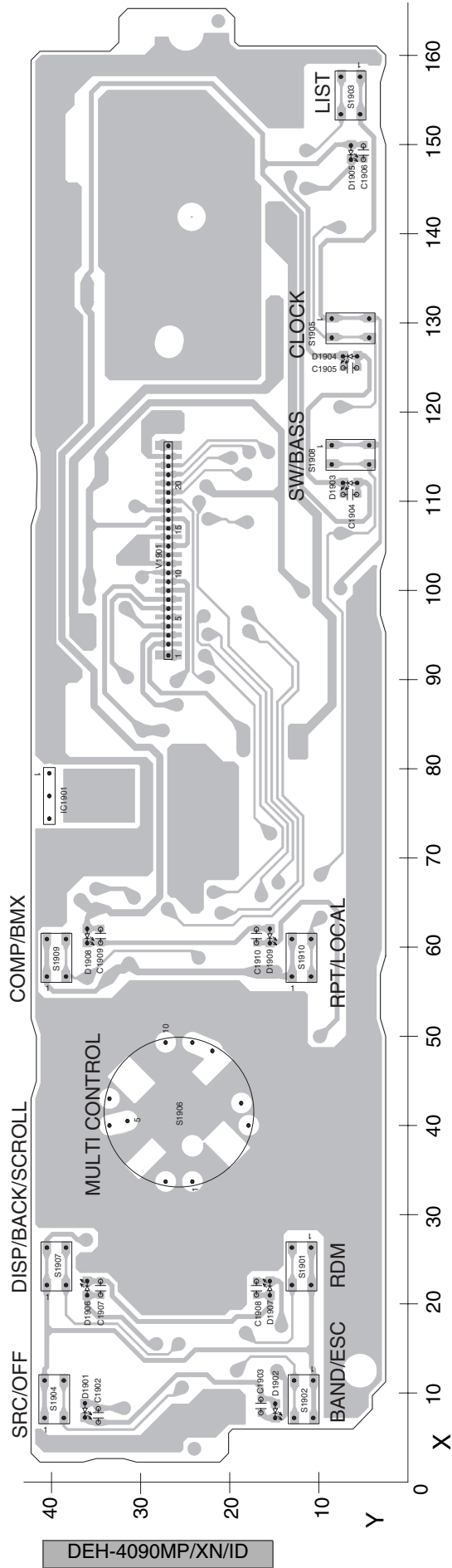
SIDE B



11.2 KEYBOARD UNIT

B KEYBOARD UNIT

SIDE A



B KEYBOARD UNIT

SIDE B

A

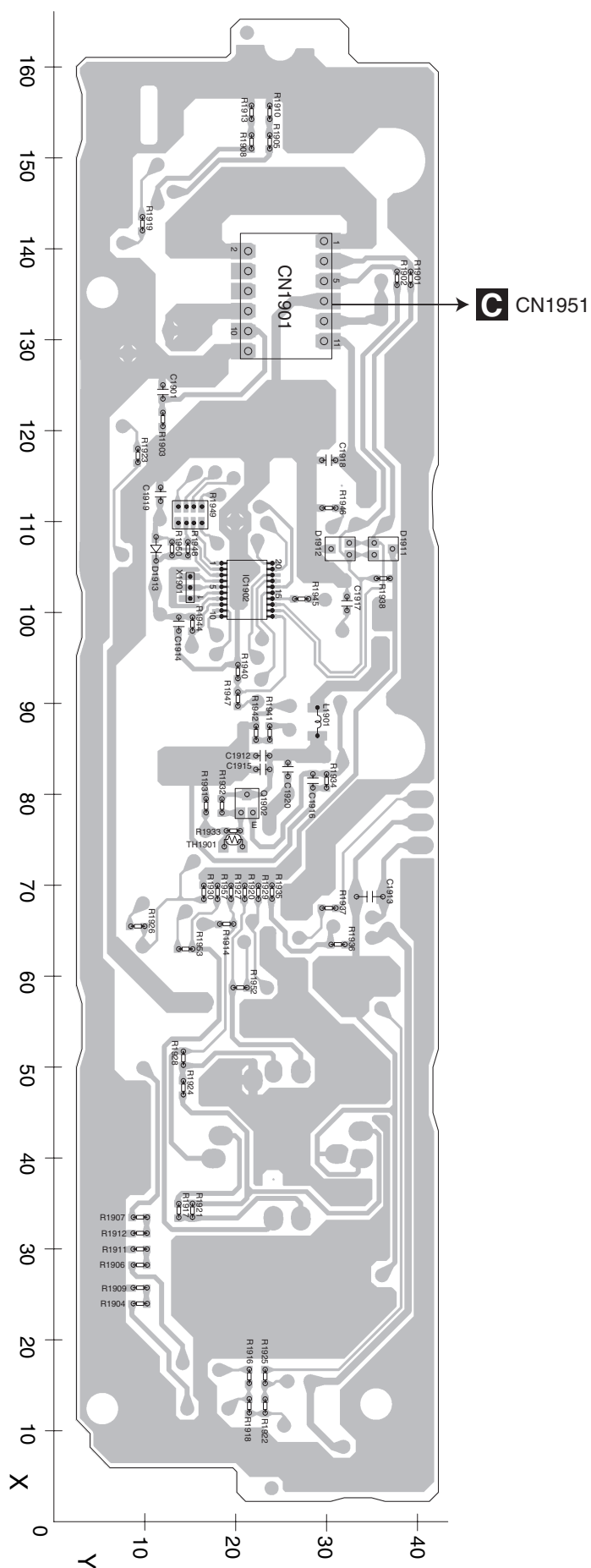
B

C

D

E

F



11.3 CD CORE UNIT(S10.5COMP2)

D CD CORE UNIT(S10.5COMP2)

SIDE A

A CN701

PICKUP UNIT(P10.5)(SERVICE)

CN701

CN101

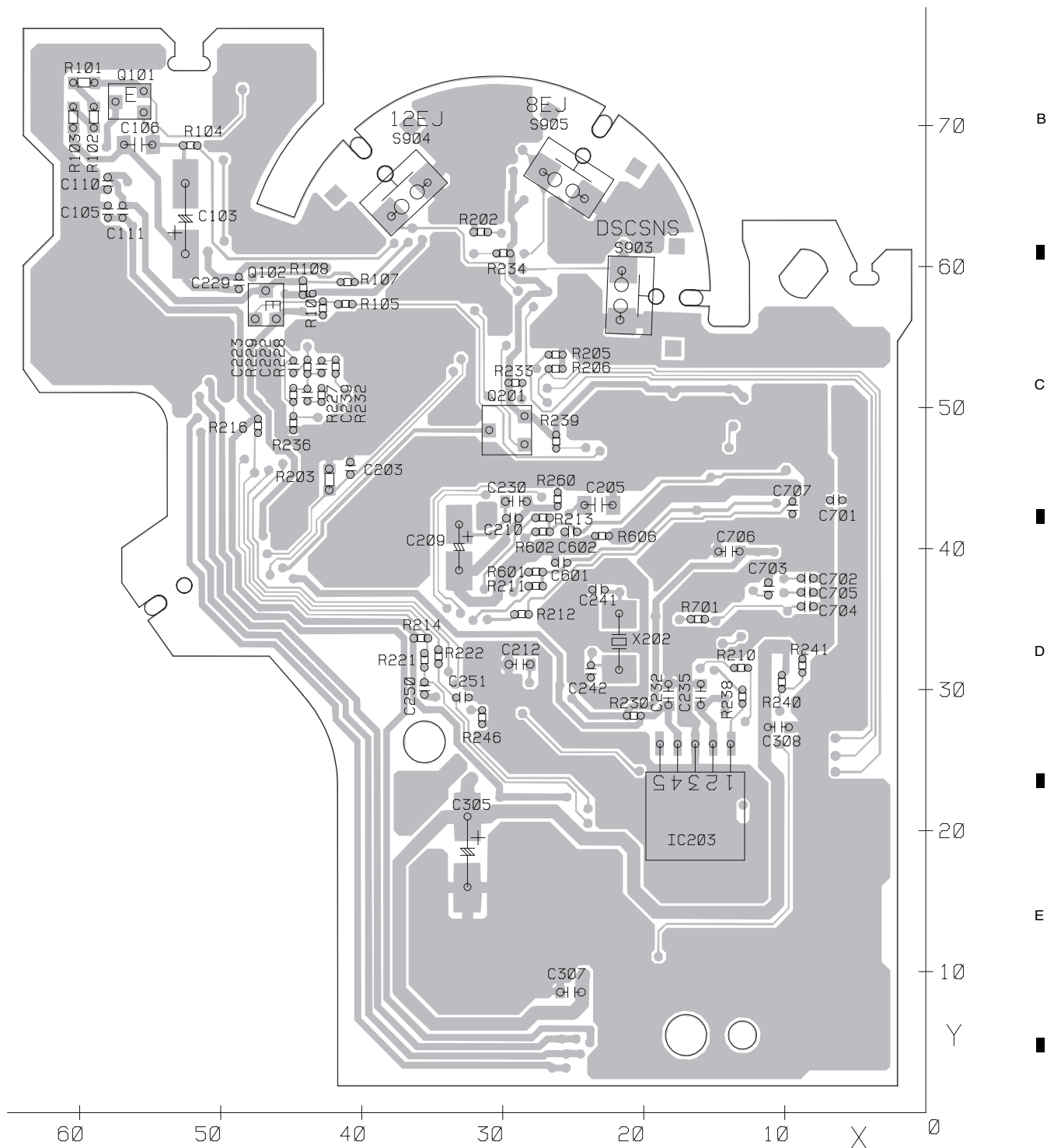
CN702
1 2 3 4 5 6

M2
LOADING
/CARRIAGE
MOTOR

M1
SPINDLE
MOTOR

D CD CORE UNIT(S10.5COMP2)

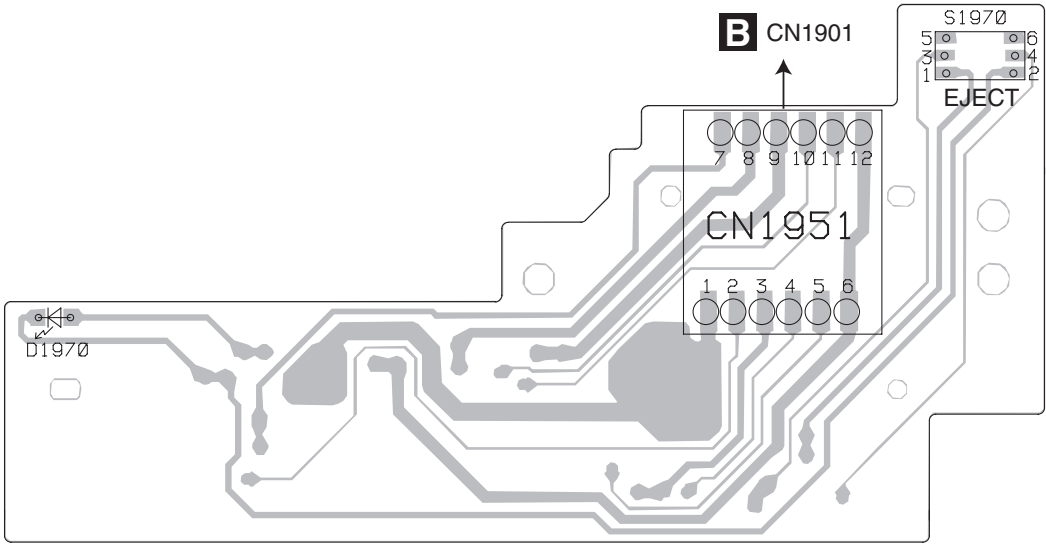
SIDE B



11.4 PANEL UNIT

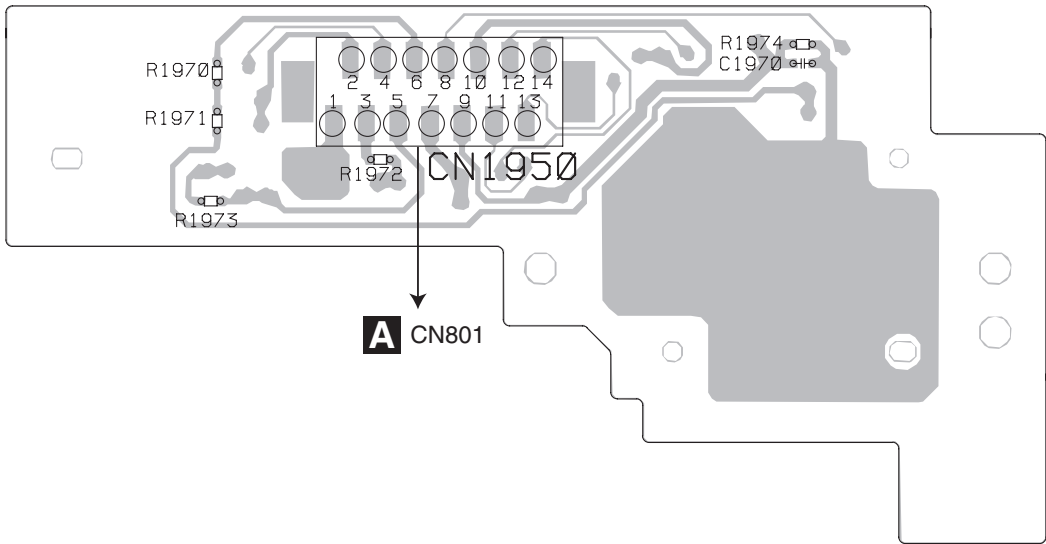
C PANEL UNIT

SIDE A



C PANEL UNIT

SIDE B



C

12. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○○J,RS1/○○S○○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Meaning of the figures and others in the parentheses in the parts list.

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

Circuit Symbol and No.	Part No.	Circuit Symbol and No.	Part No.
Unit Number : QWM3017(ID)		Q 821 (A,33,36) Transistor	2SD1767
Unit Number : QWM3028(UR)		Q 823 (B,33,39) Transistor	RT3T22M
Unit Name : Tuner Amp Unit			
Unit Number :		Q 891 (B,97,28) Transistor	2SA1576A
Unit Name : Keyboard Unit		Q 892 (B,93,21) Chip Transistor	DTC114EUA
Unit Number : CWM8758		Q 901 (A,7,105) Transistor	2SD2396
Unit Name : Panel Unit		Q 902 (B,29,80) Transistor	RT3T22M
Unit Number : CWX3514		Q 921 (B,51,99) Transistor	RT3CLLM
Unit Name : CD Core Unit(S10.5COMP2)			
		Q 931 (B,133,77) Chip Transistor	DTC114EUA
		D 153 (A,11,128) Diode	MALS068X
		D 154 (A,8,128) Diode	MALS068X
		D 155 (A,17,128) Diode	MALS068X
		D 351 (A,93,102) Diode	1SR139-400
		D 352 (A,90,102) Diode	1SR139-400
		D 381 (A,140,77) Diode	1SS133
		D 391 (A,135,70) Diode	MC2848-11
		D 392 (A,17,91) Diode	HZS9L(A2)
		D 561 (B,49,17) Diode	RB551V-30
		D 563 (A,24,29) Diode	MTZJA10(B)
		D 751 (A,15,69) Diode	MTZJA8R2(B)
		D 801 (B,111,31) Diode	MC2850-11
		D 804 (B,125,28) Diode	MC2848-11
		D 805 (B,130,28) Diode	MC2846-11
		D 821 (A,40,30) Diode	MTZJA10(B)
		D 901 (A,17,83) Diode	HZS6L(B1)
		D 902 (A,17,87) Diode	1SR139-400
		D 921 (A,55,110) Diode	HZS7L(A1)
		D 922 (A,58,104) Diode	HZS7L(C3)
		D 931 (A,140,74) Diode	1SS133
		D 981 (A,75,109) Diode	1SR139-400
		D 982 (A,78,109) Diode	1SR139-400
		ZNR401 (B,164,114) Surge Protector	IMS-A-6801-01Y901
		L 201 (A,67,92) Ferri-Inductor	LAU4R7K
		L 202 (A,67,80) Ferri-Inductor	LAU100K
		L 401 (B,156,98) Chip Coil	LCTAW4R7J2520
		L 402 (A,148,90) Inductor	LAU1R0K
		L 403 (A,152,48) Inductor	LAU1R0K
		L 561 (A,40,16) Inductor	CTF1660
		L 602 (A,85,60) Ferri-Inductor	LAU100K
		L 891 (A,100,23) Ferri-Inductor	LAU100K
		L 981 (A,32,108) Choke Coil 600 μ H	CTH1280
		X 601 (A,101,54) Crystal Resonator 15.000 MHz	CSS1653

MISCELLANEOUS

IC 201 (B,107,90) IC	PML018A
IC 351 (A,105,140) IC	PAL007C
IC 431 (A,152,27) IC	NJM2885DL1-33
IC 561 (B,39,19) IC	NJM2360M
IC 601 (A,117,55) IC	PEG404A
IC 651 (A,93,52) IC	S-80835CNMC-B8U
IC 780 (A,54,29) IC	NJM2885DL1-33
IC 911 (A,6,121) IC	NJM2388F84
Q 302 (B,138,127) Transistor	RT3C99M
Q 303 (B,162,129) Transistor	RT3C99M
Q 351 (A,143,93) Chip Transistor	DTC124EUA
Q 381 (A,139,100) Transistor	RT3T22M
Q 391 (B,25,92) Transistor	2SC4081
Q 561 (A,16,33) Transistor	2SD1858
Q 562 (B,30,33) Transistor	RT3T22M
Q 751 (A,7,71) Transistor	2SD2396
Q 752 (B,23,58) Transistor	RT3T22M
Q 801 (A,104,26) Transistor	RT1N431M

1

2

3

4

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

S 801 (A,25,10) Switch(DETACH) CSN1039

R 412 (B,128,49)

RS1/16S681J

R 413 (B,133,51)

RS1/16S681J

R 562 (A,40,24)

RD1/4PU472J

⚠️FU301 (B,127,135) Fuse 3 A CEK1286

BZ601 (A,137,24) Buzzer CPV1062

ANT401 (A,169,127) Antenna Jack CKX1056

⚠️ Fuse 10 A YEK5001

R 563 (B,31,16)

RS1/16S102J

R 564 (B,29,17)

RS1/16S821J

R 565 (A,110,34)

RS1/16S0R0J

R 566 (B,33,22)

RS1/10SR821J

R 567 (A,31,17)

RS1/16S1R0J

RESISTORS

R 155 (A,64,75) RS1/16S104J

R 158 (A,75,73) RS1/16S104J

R 159 (B,123,79) RS1/16S101J

R 160 (B,85,84) RS1/16S101J

R 161 (A,67,100) RS1/16S223J

R 568 (A,25,36)

RD1/4PU681J

R 601 (B,117,67)

RS1/16S473J

R 602 (B,122,64) (ID)

RS1/16S473J

R 603 (A,96,59)

RS1/16S0R0J

R 604 (B,100,60)

RS1/16S0R0J

R 162 (A,71,100) RS1/16S223J

R 165 (B,78,83) RS1/16S102J

R 201 (B,119,89) RS1/16S102J

R 202 (B,124,90) RS1/16S102J

R 203 (B,118,92) RS1/16S102J

R 605 (B,123,57)

RS1/16S104J

R 606 (B,108,62)

RS1/16S473J

R 608 (B,137,29)

RS1/16S102J

R 610 (A,65,72)

RS1/16S104J

R 641 (A,129,43)

RS1/16S104J

R 204 (B,52,87) RS1/16S0R0J

R 205 (B,119,97) RS1/16S101J

R 206 (B,103,106) RS1/16S101J

R 207 (B,124,95) RS1/16S101J

R 208 (B,89,95) RS1/16S101J

R 652 (A,91,57)

RS1/16S822J

R 653 (A,94,57)

RS1/16S102J

R 710 (B,85,32)

RS1/16S102J

R 716 (B,85,30)

RS1/16S102J

R 721 (A,74,37)

RS1/16S104J

R 209 (B,118,94) RS1/16S101J

R 210 (B,91,91) RS1/16S101J

R 303 (A,140,124) RS1/16S821J

R 304 (B,131,127) RS1/16S821J

R 305 (A,157,123) RS1/16S821J

R 722 (B,86,41)

RS1/16S472J

R 723 (A,72,41)

RS1/16S104J

R 724 (B,84,42)

RS1/16S472J

R 725 (B,83,43)

RS1/16S104J

R 726 (A,96,36)

RS1/16S221J

R 306 (B,149,115) RS1/16S821J

R 309 (B,139,120) RS1/16S472J

R 310 (B,133,128) RS1/16S472J

R 311 (B,167,128) RS1/16S472J

R 312 (B,165,124) RS1/16S472J

R 728 (A,96,42)

RS1/16S221J

R 729 (A,96,37)

RS1/16S221J

R 730 (B,90,40)

RS1/16S221J

R 731 (B,71,34)

RS1/16S221J

R 733 (A,74,35)

RS1/16S104J

R 315 (A,142,124) RS1/16S223J

R 316 (B,128,132) RS1/16S223J

R 317 (A,157,126) RS1/16S223J

R 318 (B,162,134) RS1/16S223J

R 320 (B,142,123) RS1/16S0R0J

R 751 (A,15,61)

RD1/4PU561J

R 801 (B,124,24)

RS1/16S222J

R 804 (B,127,23)

RS1/16S222J

R 805 (B,114,25)

RS1/16S222J

R 806 (A,40,36)

RD1/4PU391J

R 321 (B,136,132) RS1/16S0R0J

R 351 (B,117,110) RS1/16S0R0J

R 352 (B,119,111) RS1/16S0R0J

R 353 (B,122,111) RS1/16S0R0J

R 354 (B,114,110) RS1/16S0R0J

R 807 (B,106,25)

RS1/16S222J

R 808 (B,111,25)

RS1/16S473J

R 811 (B,125,33)

RS1/16S102J

R 813 (B,108,25)

RS1/16S222J

R 815 (B,111,28)

RS1/16S473J

R 359 (A,146,85) RS1/16S103J

R 360 (A,139,95) RS1/16S103J

R 361 (A,139,88) RS1/16S153J

R 362 (A,139,93) RS1/16S331J

R 363 (B,107,113) RS1/16S0R0J

R 816 (A,65,12)

RS1/16S102J

R 817 (A,63,14)

RS1/16S104J

R 821 (A,83,17)

RS1/16S472J

R 822 (A,78,16)

RS1/16S1R0J

R 823 (A,40,39)

RD1/4PU471J

R 381 (A,143,102) RS1/16S102J

R 391 (B,25,87) RS1/16S223J

R 392 (B,22,92) RS1/16S683J

R 393 (B,25,94) RS1/16S683J

R 401 (B,159,71) RS1/16S681J

R 831 (A,113,21)

RS1/16S0R0J

R 891 (B,101,21)

RS1/16S222J

R 892 (B,96,25)

RS1/16S102J

R 893 (B,94,28)

RS1/16S473J

R 902 (B,12,83)

RS1/16S822J

R 403 (B,156,81) RS1/16S681J

R 404 (B,156,84) RS1/16S681J

R 405 (B,156,86) RS1/16S681J

R 406 (B,157,88) RS1/16S681J

F R 407 (B,157,90) RS1/16S681J

R 903 (B,34,80)

RS1/16S222J

R 911 (A,34,82)

RS1/16S102J

R 912 (A,34,84)

RS1/16S103J

R 921 (B,46,97)

RS1/16S104J

R 922 (B,49,93)

RS1/16S104J

R 410 (B,152,65) RS1/16S0R0J

R 411 (B,143,45) RS1/16S681J

R 923 (B,45,101)

RS1/16S104J

R 924 (B,68,100)

RS1/16S103J

1

2

3

4

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
R 925	(B,68,102)	RS1/16S473J		C 569	(B,21,29)	CKSRYB104K16	
R 926	(B,58,99)	RS1/16S473J		C 601	(B,115,63)	CCSRCH101J50	
R 927	(B,48,106)	RS1/16S472J		C 603	(B,97,57)	CCSRCH220J50	
				C 604	(B,101,48)	CCSRCH180J50	A
R 928	(A,55,113)	RD1/4PU102J		C 605	(A,88,53)	CEJQ4R7M35	
R 931	(B,131,81)	RS1/16S104J					
R 932	(B,135,82)	RS1/16S103J		C 607	(B,90,53)	CKSRYB105K10	
R 933	(A,64,104)	RD1/4PU102J		C 609	(B,76,64)	CKSRYB105K10	
CAPACITORS				C 651	(A,80,67)	CEJQ2R2M50	
C 152	(A,56,116)	CKSRYB104K16		C 702	(B,85,35)	CKSRYB152K50	
C 154	(A,67,102)	CKSRYB472K50		C 705	(B,86,28)	CKSRYB152K50	
C 155	(A,71,102)	CKSRYB472K50					
C 201	(B,118,81)	CKSRYB105K10		C 730	(B,65,33)	CKSRYB105K10	
C 204	(B,123,85)	CKSRYB224K16		C 751	(B,45,69)	CKSRYB104K16	
				C 752	(A,36,51)	CEJQ101M16	
C 205	(B,118,86)	CKSRYB105K10		C 753	(B,14,66)	CKSRYB473K50	
C 206	(B,96,81)	CKSRYB105K10		C 781	(B,58,24)	CKSRYB103K50	B
C 207	(B,90,83)	CKSRYB105K10					
C 210	(B,96,86)	CKSRYB224K16		C 782	(A,55,21)	CEJQ470M6R3	
C 211	(B,90,88)	CKSRYB105K10		C 783	(A,82,55)	CEJQ4R7M35	
				C 784	(B,84,52)	CKSRYB105K10	
C 212	(A,77,90)	CEJQ100M25		C 822	(B,35,29)	CKSRYB472K50	
C 213	(B,81,92)	CKSRYB104K16		C 893	(B,100,25)	CKSRYB105K10	
C 214	(A,84,97)	CEJQ470M16					
C 215	(A,106,102)	CEJQ100M25		C 901	(A,37,74)	CEJQ470M16	
C 216	(B,72,95)	CKSRYB104K16		C 902	(B,15,76)	CKSRYB103K50	
				C 903	(B,23,83)	CKSRYB472K50	
C 217	(A,77,97)	CEJQ470M16		C 904	(A,26,74)	CEAT102M16	
C 303	(A,145,117)	CEJQ4R7M35		C 911	(A,27,87)	CEJQ221M16	C
C 304	(A,140,117)	CEJQ4R7M35					
C 305	(A,153,119)	CEJQ4R7M35		C 912	(B,20,102)	CKSRYB103K50	
C 306	(A,145,110)	CEJQ4R7M35		C 913	(A,16,97)	CEJQ101M16	
				C 914	(B,11,121)	CKSRYB103K50	
C 351	(B,117,116)	CKSRYB474K10		C 921	(B,48,109)	CKSRYB104K16	
C 352	(B,119,117)	CKSRYB474K10		C 931	(A,140,70)	CEJQ1R0M50	
C 353	(B,121,127)	CKSRYB474K10					
C 354	(B,110,114)	CKSRYB474K10		C 981	(A,50,125) 3 300 µF/16 V	CCH1486	
C 355	(B,117,121)	CKSQYB474K25		C 982	(B,60,120)	CKSRYB104K16	
C 356	(B,120,122)	CKSQYB474K25		<div>B</div> Unit Number : Unit Name : Keyboard Unit			
C 357	(B,121,131)	CKSQYB474K25					
C 358	(B,114,120)	CKSQYB474K25		MISCELLANEOUS			
C 360	(B,125,127)	CKSQYB225K10		IC 1901	(A,77,35) Remote IC	GP1UX51RK	
C 361	(B,106,146)	CKSRYB104K16		IC 1902	(B,103,22) IC	PEG411A	
				Q 1902	(B,79,22) Transistor	2SC4081	
C 362	(A,134,111)	CEJQ100M25		D 1901	(A,8,37) LED	CL-195PG-CD	
C 363	(A,134,117)	CEJQ330M10		D 1902	(A,8,15) LED	CL-195PG-CD	
C 364	(B,124,131)	CKSQYB225K10					
C 381	(A,141,81)	CEJQ220M16		D 1903	(A,112,7) LED	CL-195PG-CD	
C 404	(B,152,52)	CKSRYB103K50		D 1904	(A,126,7) LED	CL-195PG-CD	
				D 1905	(A,149,7) LED	CL-195PG-CD	
C 405	(B,153,67)	CKSRYB103K50		D 1906	(A,22,36) LED	CL-195PG-CD	
C 406	(B,147,94)	CKSRYB103K50		D 1907	(A,22,16) LED	CL-195PG-CD	E
C 407	(A,154,55)	CEJQ470M6R3					
C 408	(A,154,69)	CEJQ470M10		D 1908	(A,61,36) LED	CL-195PG-CD	
C 410	(A,148,98)	CEJQ101M16		D 1909	(A,61,16) LED	CL-195PG-CD	
				D 1913	(B,107,12) Diode	1SS355	
C 413	(B,158,65)	CKSRYB474K10		L 1901	(B,88,29) Inductor	CTF1617	
C 417	(B,127,54)	CCSRCH470J50		X 1901	(B,103,15) Radiator 10.0 MHz	CSS1577	
C 432	(A,150,38)	CEJQ470M6R3					
C 434	(A,141,36)	CEJQ1R0M50		S 1901	(A,24,12) Push Switch	CSG1155	
C 562	(A,53,13)	CEJQ470M25		S 1902	(A,9,12) Push Switch	CSG1155	
				S 1903	(A,156,7) Push Switch	CSG1155	
C 564	(B,40,23)	CKSRYB223K50		S 1904	(A,9,40) Push Switch	CSG1155	
C 565	(B,45,15)	CCSRCH331J50		S 1905	(A,129,7) Push Switch	CSG1155	F
C 566	(B,30,25)	CKSRYB104K16					
C 567	(A,30,28)	CEJQ101M16		S 1906	(A,40,25) Switch(MULTI-CONTROL)	CSX1120	
C 568	(A,26,21)	CEJQ470M16					

1

Circuit Symbol and No.

S 1907 (A,24,40) Push Switch
 S 1908 (A,115,7) Push Switch
 S 1909 (A,59,40) Push Switch
 S 1910 (A,59,12) Push Switch

2

Part No.

CSG1155
 CSG1155
 CSG1155
 CSG1155

3

Circuit Symbol and No.

C 1915 (B,83,23)
 C 1916 (B,82,29)
 C 1917 (B,101,33)

 C 1918 (B,117,31)
 C 1919 (B,113,12)
 C 1920 (B,83,26)

4

Part No.

CKSRYB104K16
 CKSRYB104K16
 CKSRYB224K16

 CKSRYB105K10
 CKSRYB104K16
 CKSRYB103K50

RESISTORS

R 1901 (B,137,40)
 R 1902 (B,137,38)
 R 1903 (B,121,12)
 R 1904 (B,24,10)
 R 1905 (B,152,24)

RS1/16S222J
 RS1/16S222J
 RS1/16S473J
 RS1/16S151J
 RS1/16S151J

R 1906 (B,28,10)
 R 1907 (B,34,10)
 R 1908 (B,152,22)
 R 1909 (B,26,10)
 R 1910 (B,155,24)

RS1/16S151J
 RS1/16S151J
 RS1/16S271J
 RS1/16S121J
 RS1/16S121J

R 1911 (B,30,10)
 R 1912 (B,32,10)
 R 1913 (B,155,22)
 R 1914 (B,66,19)
 R 1916 (B,16,22)

RS1/16S121J
 RS1/16S121J
 RS1/16S271J
 RS1/16S102J
 RS1/16S333J

R 1917 (B,34,14)
 R 1918 (B,13,22)
 R 1919 (B,143,10)
 R 1920 (B,69,21)
 R 1921 (B,34,16)

RS1/16S333J
 RS1/16S822J
 RS1/16S822J
 RS1/16S103J
 RS1/16S822J

R 1922 (B,13,24)
 R 1923 (B,117,10)
 R 1924 (B,48,15)
 R 1925 (B,16,24)
 R 1926 (B,66,10)

RS1/16S332J
 RS1/16S332J
 RS1/16S332J
 RS1/16S222J
 RS1/16S222J

R 1927 (B,69,20)
 R 1928 (B,51,15)
 R 1929 (B,69,23)
 R 1930 (B,69,17)
 R 1931 (B,79,17)

RS1/16S103J
 RS1/16S222J
 RS1/16S103J
 RS1/16S103J
 RS1/16S682J

R 1932 (B,79,19)
 R 1933 (B,76,20)
 R 1934 (B,82,30)
 R 1935 (B,69,24)
 R 1936 (B,64,32)

RS1/16S3902F
 RS1/16S6802F
 RS1/16S392J
 RS1/16S101J
 RS1/16S103J

R 1937 (B,68,31)
 R 1938 (B,104,37)
 R 1940 (B,94,21)
 R 1941 (B,87,24)
 R 1942 (B,87,23)

RS1/16S2R2J
 RS1/16S103J
 RS1/16S473J
 RS1/16S2202D
 RS1/16S3002D

R 1944 (B,99,16)
 R 1945 (B,102,28)
 R 1946 (B,112,31)
 R 1947 (B,91,21)
 R 1948 (B,107,15)

RS1/16S473J
 RS1/16S101J
 RS1/16S102J
 RS1/16S101J
 RS1/16S473J

R 1949 (B,111,15)
 R 1950 (B,107,13)
 R 1952 (B,59,21)
 R 1953 (B,63,15)
 R 1957 (B,69,18)

RAB4C101J
 RS1/16S154J
 RS1/16S102J
 RS1/16S102J
 RS1/16S103J

CAPACITORS

C 1913 (B,69,35)
 C 1914 (B,99,14)

CKSYF106Z10
 CKSRYB103K50

C**Unit Number : CWM8758****Unit Name : Panel Unit****MISCELLANEOUS**

D 1970 LED CL220PGC
 S 1970 Push Switch(EJECT) CSG1112

RESISTORS

R 1970 RS1/16S101J
 R 1971 RS1/16S101J
 R 1972 RS1/16S0R0J

CAPACITORS

C 1970 CKSRYB104K16

D**Unit Number : CWX3514****Unit Name : CD Core Unit(S10.5COMP2)****MISCELLANEOUS**

IC 201 (A,34,46) IC PE5547A
 IC 301 (A,27,14) IC BA5839FP
 Q 101 (B,56,72) Transistor 2SA1577
 Q 102 (B,47,57) Chip Transistor 2SB1689

X 201 (A,23,35) Ceramic Resonator 16.934 MHz CSS1603
 S 901 (A,53,37) Switch(HOME) CSN1067
 S 903 (B,19,58) Switch(DSCSNS) CSN1067
 S 904 (B,38,67) Switch(12EJ) CSN1068
 S 905 (B,24,68) Switch(8EJ) CSN1068

RESISTORS

R 101 (B,60,73) RS1/10SR2R4J
 R 102 (B,59,71) RS1/10SR2R4J
 R 103 (B,60,71) RS1/10SR2R7J
 R 104 (B,52,69) RS1/16SS222J
 R 105 (B,41,57) RS1/16SS102J

 R 107 (B,41,59) RS1/16SS105J
 R 202 (B,32,62) RS1/16SS473J
 R 203 (B,42,45) RS1/16S473J
 R 204 (A,25,61) RS1/16SS221J

R 206 (B,26,53) RS1/16SS104J
 R 210 (B,13,32) RS1/16SS102J
 R 214 (B,36,34) RS1/16SS472J
 R 216 (B,47,49) RS1/16SS472J
 R 221 (B,36,32) RS1/16SS103J

R 222 (B,35,32) RS1/16SS103J
 R 225 (A,49,49) RS1/16SS103J
 R 226 (A,49,50) RS1/16SS393J
 R 227 (B,45,51) RS1/16SS562J

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
R 228	(B,42,53)	RS1/16SS122J		C 704	(B,8,36)	CKSSYB102K50	
R 229	(B,44,53)	RS1/16SS472J		C 711	(A,25,26)	CKSSYB104K10	
R 230	(B,21,28)	RS1/16SS0R0J		Miscellaneous Parts List			
R 232	(B,43,51)	RS1/16SS122J					
R 233	(B,29,52)	RS1/16SS103J			Pickup Unit(P10.5)(Service)	CXX1942	A
R 234	(B,30,61)	RS1/16SS473J		M 1	Motor Unit(SPINDLE)	CXC7134	
R 235	(A,25,63)	RS1/16SS473J		M 2	Motor Unit(LOADING/CARRIAGE)	CXC4026	
R 239	(B,26,48)	RS1/16SS473J					
R 240	(B,10,31)	RS1/16SS473J					
R 241	(B,9,32)	RS1/16SS103J					
R 244	(A,20,52)	RS1/16SS473J					
R 255	(A,27,63)	RAB4CQ104J					
R 307	(A,34,19)	RS1/16SS183J					
R 308	(A,38,20)	RS1/16SS183J					
R 309	(A,35,21)	RS1/16SS183J					
R 310	(A,38,21)	RS1/16SS183J					
R 601	(B,28,38)	RS1/16SS0R0J					
R 602	(B,27,41)	RS1/16SS0R0J					
R 606	(B,23,41)	RS1/16SS0R0J					
R 701	(B,16,35)	RS1/16SS221J					
R 702	(A,23,55)	RS1/16SS221J					
<u>CAPACITORS</u>							
C 106	(B,56,69)	CKSQYB475K6R3					
C 202	(A,27,57)	CKSSYB104K10					
C 204	(A,24,63)	CKSSYB103K16					
C 205	(B,23,43)	CKSQYB475K6R3					
C 206	(A,22,39)	CKSSYB104K10					
C 207	(A,24,37)	CKSRYB104K16					
C 209	(B,33,40)	CEVW220M6R3					
C 210	(B,29,42)	CKSSYB104K10					
C 211	(A,27,34)	CKSSYB104K10					
C 212	(B,29,32)	CKSRYB104K16					
C 213	(A,44,37)	CKSSYB104K10					
C 214	(A,28,33)	CKSSYB104K10					
C 216	(A,50,51)	CKSSYB332K50					
C 217	(A,46,51)	CKSSYB104K10					
C 218	(A,49,51)	CKSSYB473K10					
C 219	(A,45,53)	CKSSYB104K10					
C 220	(A,46,53)	CKSSYB182K50					
C 221	(A,44,53)	CKSSYB104K10					
C 222	(B,43,53)	CCSSCH560J50					
C 223	(B,45,53)	CCSSCH4R0C50					
C 224	(A,43,55)	CKSSYB104K10					
C 226	(A,40,58)	CCSSCH680J50					
C 227	(A,40,60)	CCSSCH470J50					
C 228	(A,39,62)	CKSSYB103K16					
C 229	(B,49,59)	CKSSYB104K10					
C 236	(A,42,61)	CKSSYB104K10					
C 239	(B,44,51)	CCSSCH220J50					
C 240	(A,35,61)	CKSSYB104K10					
C 250	(B,36,30)	CKSSYB102K50					
C 251	(B,33,29)	CKSSYB102K50					
C 303	(A,35,19)	CKSSYB472K25					
C 304	(A,34,21)	CKSSYB223K16					
C 307	(B,25,9)	CKSRYB104K16					
C 308	(B,10,27)	CKSRYB105K10					
C 703	(B,11,37)	CCSSCH101J50					